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## **Public Health Assessment**

# **Cornell Dubilier Electronics Inc.**

## **South Plainfield, Middlesex County**

CERCLIS # NJD981557879

**Public Comment Period:**  
**April 17 - May 17, 2000**

*Prepared Under a Cooperative Agreement with the:*

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE  
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY**

*All comments must be submitted in writing to:*

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**Public Health Assessment**

**Cornell Dubilier Electronics, Incorporated  
CERCLIS Number: NJD981557879**

**South Plainfield, Middlesex County, New Jersey**

**April 17, 2000**

**Prepared by:**

**Hazardous Site Health Evaluation Program  
Consumer and Environmental Health Services  
Division of Epidemiology, Environmental and Occupational Health  
The New Jersey Department of Health and Senior Services**

**Under a Cooperative Agreement with:  
The Agency for Toxic Substances and Disease Registry**

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## ACRONYMS

|        |   |
|--------|---|
| ATSDR  | Agency for Toxic Substances and Disease Registry    |
| EPA    | United States Environmental Protection Agency       |
| FDA    | United States Food and Drug Administration          |
| NJDEP  | New Jersey Department of Environmental Protection   |
| NJDHSS | New Jersey Department of Health and Senior Services |
| NJDOA  | New Jersey Department of Agriculture                |
| SPHD   | South Plainfield Health Department                  |
| MCPHD  | Middlesex County Public Health Department           |

## **SUMMARY**

The Cornell Dubilier Electronics, Incorporated (CDE) site (also known as the Hamilton Industrial Park) is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. From 1936 until 1962, CDE manufactured electronic parts and components, including capacitors, at the site. CDE also tested transformer oils. It is alleged that the company dumped materials that were contaminated with polychlorinated biphenyls (PCBs) and other hazardous substances directly onto the ground.

In 1994 the U.S. Environmental Protection Agency (EPA) found that on-site soil contained PCBs and trichloroethylene at levels that were significantly above background. PCBs were also found in soil and indoor dust at residential properties located across the street from the CDE site at levels of public health concern. Fish collected from the nearby Bound Brook contained PCBs at levels above the U.S. Food and Drug Administration tolerance level, resulting in a fish consumption advisory for the entire length of the Bound Brook, New Market Pond, and the streams that feed into them.

In addition to this health assessment, the Agency for Toxic Substances and Disease Registry (ATSDR) and the New Jersey Department of Health and Senior Services (NJDHSS) have completed several health consultations for the CDE site between 1996 and 1999. The ATSDR and NJDHSS have concluded that the CDE site, in its present state, poses a public health hazard to area residents because site-related contaminants are migrating to off-site properties and local waterways.

The ATSDR and the NJDHSS have prepared fact sheets for the CDE site for distribution through the local health department to area residents. The NJDHSS will also assist the Middlesex County Public Health Department (MCPHD) in providing community and health care provider education.

## BACKGROUND

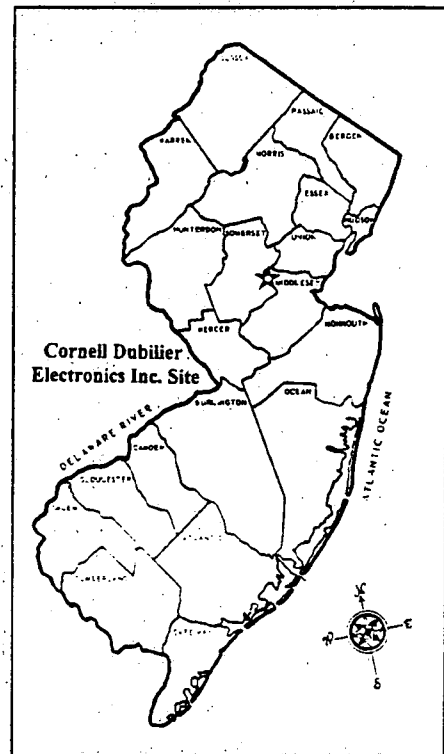
The ATSDR and the NJDHSS have completed several health consultations for the CDE site between 1996 and 1998. This public health assessment will evaluate and summarize the activities undertaken and/or planned by the ATSDR and the NJDHSS.

### A. Site Description and History

The Cornell Dubilier Electronics, Incorporated (CDE) site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey (see inset). It consists of approximately 25 acres in an industrial/residential area. The site is bordered by residences and commercial businesses from the south to the north. An unnamed tributary of the Bound Brook borders the property on the southeast. The Bound Brook and the unnamed tributary converge approximately 800 meters downstream of the site. Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond. Conrail railroad tracks crisscross the unnamed tributary just north of the site. Other industries are scattered to the northeast and east of the site, on the side opposite the Conrail tracks.

From 1936 to 1962, CDE manufactured electronic parts and components, including capacitors. CDE tested transformer oils, and it is alleged that the company dumped materials contaminated with polychlorinated biphenyls (PCBs) and other hazardous substances directly onto the soil at the site. Currently known as Hamilton Industrial Park, the site is occupied by approximately 15 commercial businesses. Numerous companies have rented locations at the site and operated businesses there over the years. A paved driveway is used to enter the industrial park, and the grounds surrounding the buildings are paved. A vacant field at the back of the buildings is fenced and posted with signs indicating the presence of hazardous material.

In June 1994, soil, surface water, and sediments were sampled and analyzed by EPA. The results of the sample analyses indicated that concentrations of PCBs and trichloroethylene (TCE) in on-site soils were significantly above background levels (background levels are levels typical of naturally occurring concentrations or of concentrations found in uncontaminated areas). EPA conducted additional soil and sediment sampling in February, 1996. PCBs, alpha-chlordane, and TCE were detected in the soil samples, and PCBs were detected in sediment samples, at levels significantly above background levels.



PCBs were also detected in the sediment of the unnamed tributary of the Bound Brook. PCB contamination of more than one-tenth of a mile of wetland frontage of the tributary was documented. At least two fisheries are known to exist within the target distance limit. A sediment sample collected from the stream near the back of the property indicated the presence of PCBs, TCE, 1,2-dichloroethene, and lead. PCBs, 1,2-dichloroethene, TCE, and heavy metals were also detected in surface water samples collected from the same location. In addition, EPA collected soil samples from residential properties bordering the site and initiated a study of the nearby waters of the Bound Brook in June 1997. As part of this study, samples of sediment and fish were collected from the Bound Brook and New Market Pond. Fish collected from the Bound Brook were found to contain PCBs at levels higher than the U.S. Food and Drug Administration (FDA) tolerance level of 2.0 parts per million (ppm). In response to the level of PCBs detected in the fish, on August 8, 1997, the NJDEP, the NJDHSS and the New Jersey Department of Agriculture (NJDOA), in coordination with the USEPA, issued an interim fish consumption advisory for the entire length of the Bound Brook, Middlesex County. In August of 1997, ATSDR provided a short fact sheet for use by the local health department describing the reasons for the advisory. EPA is currently collecting additional sediment samples to determine the extent of the PCB contamination from portions of the Bound Brook between New Market Pond and the Raritan River. In August 1998, the NJDEP, the NJDHSS and NJDA, in coordination with the USEPA, issued the final fish consumption advisory for the entire length of the Bound Brook including Spring Lake.

In October 1997, EPA collected surface soil samples from 16 residential properties located across the street from the CDE site. The soils were analyzed for PCBs. Approximately 20 surface soil samples were collected from each residential property. PCB levels in surface soils ranged from not detectable to 22 ppm. In addition, on November 17 and 18, 1997, EPA collected indoor dust samples from 12 residential properties located across the street from the CDE site. Samples were collected from carpeted and non-carpeted areas. Between 2 and 4 samples were collected from each house, yielding a total of 37 samples. The dust samples were analyzed for PCBs using EPA method 8080/SW-846. The objective of this analysis was to determine the extent of PCB contamination in residences southwest of the site. PCB levels in indoor dust ranged from not detectable to 205 ppm (or 117 micrograms (ug) total PCBs in sample mass).

Due to the extensive on-site contamination and migration of contaminants, the EPA has issued a Superfund order in 1997, to the property owners (CDE), to conduct the following clean-up actions: 1) restrict access to areas known to be contaminated with PCBs; 2) take necessary actions to limit the movement of contaminants to Bound Brook through surface water runoff; and 3) pave driveways and parking areas within the industrial park.

### **Previous ATSDR and NJDHSS Activity**

The ATSDR and the NJDHSS have completed several health consultations for the CDE site in 1996, 1997, 1998 and 1999, and issued a fish consumption advisory. The following are summaries of the activities:

### **Health Consultation of September 1996**

The EPA Region II requested that ATSDR review analytical data from a fenced area at the site and determine whether PCBs in the soil were at levels of public health concern. ATSDR completed a health consultation for the site in September 1996 (**Appendix 2**) .

The health consultation reported that a fenced area of 1.5 acres was the location of a truck driving school. The school was reported to have been in operation 8 hours a day, 6 days a week since February 1996. Tractor trailers maneuver in the fenced area, while instructors outside the vehicles guide the drivers through their training. Although the composition of the ground surface within the fenced area varies, it generally consists of a compacted mixture of soil, rock, and crushed brick. When weather conditions are dry, dust is airborne within the fenced area during truck maneuvers; this may result in significant exposure (through inhalation) to dust containing PCBs, and may result in off-site migration of PCBs. The ATSDR concluded the following:

1. PCBs are present in the surface soil at levels of public health concern in the fenced area;
2. PCBs may be migrating off the site during dry conditions when dust is generated during truck maneuvers; and,
3. The extent of PCB contamination in soil in the fenced area has not been adequately defined.

ATSDR recommended the following activities:

1. Immediately stop exposure to PCBs in soil in the fenced area;
2. Prevent off-site migration of PCBs in dust or soil; and,
3. Characterize the extent of contamination in the fenced area.

### **Health Consultation of October 1996**

The EPA Region II requested that the ATSDR review analytical data from the CDE site and determine if contaminants in the soil are at levels of public health concern. ATSDR completed a health consultation for the site in October 1996 (**Appendix 3**) . Based on the limited analytical data collected at the CDE site; the following conclusions were made:

1. The limited sampling (23 sample locations for 25 acres) was inadequate to completely characterize the extent of contamination at the site;
2. Lead concentrations that present a public health concern were not widespread across the site; however, lead in one area was at a level of public health concern;



3. Cadmium was not present in on-site surface soil at levels of public health concern; and,
4. PCBs were present at levels of public health concern in sampled areas at the site. Chronic exposure to PCBs in surface soils presents a public health concern to on-site workers and trespassers.

Recommendations were made to conduct the following activities:

1. Conduct additional sampling to adequately characterize the extent of contamination at the site;
2. Prevent exposure to PCBs in surface soil at levels of public health concern; and,
3. Prevent off-site migration of PCBs in dust or soil.

#### **Health Consultation of May 1997**

The EPA Region II requested that the ATSDR comment on the public health threat posed by indoor PCB contamination at the CDE site. ATSDR completed a health consultation for the CDE site in May 1997 (**Appendix 4**).

The following conclusions were made by ATSDR:

1. The site poses a potential health threat to workers due to the presence of PCBs indoors. Although short-term effects are not likely to occur with the levels of contamination, the site does pose a potential long-term health threat to workers. Family members may also be exposed to PCBs carried home on the shoes or clothing of workers; and,
2. Wipe samples for lead and cadmium are useful as a qualitative indicator of contamination, but cannot be used to assess human exposures. Air sampling data would be more useful in qualitatively estimating potential human exposures.

Recommendations were made to perform the following activities:

1. Conduct indoor air sampling to determine the potential health threat posed by cadmium and lead contamination. If a building is unoccupied, aggressive sampling should be conducted to simulate activity;
2. If any workers are experiencing health effects, they should be evaluated by a health care provider for PCB exposure; and,
3. This site will be considered for an exposure investigation by the ATSDR Exposure

Investigation section.

### **Health Consultation of July 1997**

At the request of the Health Officer of the Borough of South Plainfield, a meeting was held on February 5, 1997, which was attended by representatives of the South Plainfield Health Department (as of June 1998, the Plainfield Health Department has been under contract with the Middlesex County Public Health Department), the NJDHSS, the ATSDR Region II, and the EPA Region II.

During the meeting various exposure pathways and levels of contaminants were discussed. The surface soil sampling events have indicated the presence of PCBs, lead, and cadmium at levels of public health concern at various locations on the CDE site. Based on the results of the June 1996 samplings, which showed high levels of PCBs in the surface soil of the fenced and unpaved area used for a truck driving school, the permit for operating a truck driving school within this area was revoked by the Borough of South Plainfield in October of 1996.

As requested by the Health Officer for South Plainfield, NJDHSS and ATSDR will assist the South Plainfield Health Department by providing public health education materials (primarily in the form of fact sheets) and professional expertise to explain the potential implications of human exposure to PCBs (Appendix 5).

The ATSDR recommended that, as soon as practicable, EPA, with the assistance of NJDHSS and ATSDR, should determine and take all necessary and appropriate interim actions which would be required to interrupt the potential exposure pathway caused by dust generation on the dirt/gravel road which traverses the site property.

### **Health Consultation of July 1997**

EPA Region II requested that ATSDR determine the health implications to emergency personnel (such as police officers, fire fighters, and medical personnel) who may come in contact with PCB contamination at the CDE site. ATSDR completed this health consultation in July 1997 (Appendix 6). ATSDR concluded that the site does not pose a health threat to fire fighters, police, medical personnel, or other emergency personnel due to the anticipated short duration of exposure to PCBs. The health consultation recommended that the personnel accessing the site and coming in contact with contaminated areas should perform appropriate decontamination procedures prior to exiting the site.

### **Health Consultation of September 1997**

EPA Region II requested that ATSDR review analytical data of fish samples collected from surface water near the CDE site and determine if PCBs are present in fish at levels of public health concern.

Available information indicated that fish were being caught and eaten from the Bound Brook and

New Market Pond (**Appendix 7**). The ATSDR concluded that PCBs in fish collected in surface water near the CDE site exceed FDA tolerance level of 2.0 ppm PCBs in fish, and are at levels of public health concern. ATSDR recommended that fish with PCB levels greater than 2 ppm in the edible portion should not be eaten.

### **ATSDR Fish Consumption Advisory Fact Sheet**

In support of the fish consumption advisory, ATSDR developed a fact sheet on the advisory for area residents and anglers using the Bound Brook, New Market Pond, and the streams that feed into them. The fact sheet warned residents and anglers of contaminated fish and advised them that consumption of these fish may be harmful to their health (**Appendix 9**).

### **Health Consultation of May 1998**

The EPA requested that the ATSDR evaluate analytical data from residential properties located across the street from the site and determine if PCBs in indoor dust and surface soils are at levels of public health concern. ATSDR completed a health consultation for the site in May 1998 (**Appendix 8**). The following conclusions were made by ATSDR:

1. Elevated levels of PCBs were detected in indoor dust and in surface soils at residential properties that may pose a health concern or potential health concern to the residents. The health evaluations for the residential properties are presented in Appendix 8;
2. The nature and extent of off-site migration of PCB-contaminated dust via wind has not been determined; and,
3. The nature and extent of surface soil PCB contamination in this residential community has not been determined.

Recommendations were made to conduct the following activities:

1. Prevent potential exposure to PCBs in surface soil at levels of public health concern. ATSDR believes that an interim measure or permanent solution to the contaminated residential yards and/or indoor dust should be put in place within six months;
2. As additional data become available on the extent and degree of off-site contamination, provide health education to residents on ways to reduce their potential exposure to PCBs present in indoor dust and surface soils. ATSDR will assist in the health education at this site through DHAC's Community Involvement Branch;
3. Appropriate cleaning methods should be used in the homes where elevated levels of PCBs were detected in indoor dust. Wet/damp dusting and mopping on floors and hard surfaces with a mineral-based cleaning solution should be used to help clean up PCBs. Carpets

should also be shampooed with these products. Prior to cleaning of the home interior surfaces by EPA, the use of a regular vacuum cleaner to remove dust is not recommended unless a HEPA filter is placed on the vacuum cleaner exhaust;

4. As needed, additional dust suppression techniques should be used at the site to prevent off-site migration of contaminated dust;
5. Conduct indoor dust sampling at residential properties where only surface soil sampling was conducted; and,
6. Determine if other residences in the area are contaminated (include soil samples from properties located upwind of the facility).

### **Health Consultation of October 1999**

The EPA Region II Removal Action Branch requested that the ATSDR and the NJDHSS evaluate the 1997 surface soil sampling from the banks and sediment sampling results from the streambed along the Bound Brook in order to respond to the following questions:

- (1) Do the data present a public health hazard?
- (2) What does ATSDR/NJDHSS recommend?

The soil and sediment samples were analyzed for total PCBs. The NJDHSS and the ATSDR completed a health consultation for the site in October 1999 (Appendix 10). The following conclusions were made by the NJDHSS and the ATSDR:

1. Based on available data reviewed for the Bound Brook, the brook currently poses **no apparent health hazard** to children and adults who utilize the brook for recreational purposes. The ATSDR and the NJDHSS have concluded that surface soils and sediment contamination does not exist at levels of public health concern for the occasional users.
2. Due to the presence of a nature trail in the area of Reach 5, persons using the nature trail may be brought in direct contact with contaminated surface soils and/or sediments. Health risks were estimated for the assumed completed exposure pathway associated with ingestion of contaminated surface soil. Using the highest level of contamination as a worst case scenario and conservative exposure factors, the NJDHSS has determined that residents using the site would not be exposed to PCBs at levels of public health significance.

Recommendations were made to conduct the following activities:

1. Maintain current fish advisory and postings for the Bound Brook and New Market Pond.

2. New environmental, toxicological, health outcome data, or changes in conditions as a result of implementing the proposed remedial plan, may determine the need for other additional actions at this site.

### **Current NJDHSS and ATSDR Health Consultations**

Currently, the NJDHSS is reviewing data from soil samples taken from a recreational area near the Bound Brook. The ATSDR is evaluating the surface soil and dust data collected from a children's day care center and residences located near the site.

### **B. Site Visit**

Several site visits have been made to the Cornell Dubilier Electronics site in recent years by the ATSDR and the NJDHSS. The most recent visit to the site was on March 23, 1998. Steve Miller and Narendra P. Singh of NJDHSS, an EPA representative, and representatives of the owners of the property visited the site. The following observations were made during the visit.

- The CDE property, now known as Hamilton Industrial Park, is an actively used industrial property that includes numerous brick buildings. Approximately 15 tenant-occupied commercial businesses employing approximately 200 individuals are currently operating on the property. The area is potentially accessible to trespassers.
- A storm and drain sewer discharges into the unnamed tributary to the Bound Brook on the northeastern border of the site, although there did not appear to be a significant current in the drainage channel. The confluence of the unnamed creek and the Bound Brook is approximately 800 meters downstream of the site. The Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond. According to local health officials fish are being caught from both the Bound Brook and the New Market Pond, and the fish advisory is being ignored by a few residents.
- A roadway nearly encircles the structures at the site, and the roadway separates the structures from a vacant field. Driveways and parking areas within the industrial park are paved. The southeastern portion of the vacant field is fenced and secured, making trespassing difficult. There is also a fence along a portion of the edge of the site bordering the stream. The remainder of the vacant field contains shrubs, high grass, and other vegetative cover. The ground surface is generally hard and appears to have been compacted. There are trees along Spicer Avenue, and trees line the area between the field and the stream.

### **C. Demographics, Land Use, and Natural Resource Use**

The surrounding area is primarily commercial and industrial in character, lightly mixed with residential properties. Approximately 500 persons reside within a quarter mile of the CDE site. The nearest residential homes are on Spicer Avenue and on the opposite side of Hamilton Boulevard, less

than 200 feet from the site. The total number of people estimated to live within 1 mile of the site is 9,900.

A summary of population statistics within 1 mile of the CDE site, calculated using an area-proportion spatial analysis technique, is presented in **Appendix 1**. On the basis of data from January 1994, the nearest municipal drinking water well is located 0.6 miles north and downgradient of the site. The drinking water purveyors serving people within a 4-mile radius of the site use supply wells that are within 4 miles of the site. Groundwater is a significant source of drinking water in this radius. The majority of the residents are served by the Middlesex or Elizabethtown water companies from these supply wells. The supply wells are blended with surface water, mainly from the Raritan River and the Delaware-Raritan Canal, which are reportedly not located in the surface water flow path from the site.

## **COMMUNITY HEALTH CONCERNS**

To gather information on community health concerns, NJDHSS contacted the SPHD and the EPA. The community concerns are related to off-site migration of site contaminants and their effects on residents of neighboring properties, the health risks associated with PCBs, and the community's role in the decision-making process. These concerns are discussed in the Public Health Implications Section.

## **ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS**

This section lists the contaminants of concern for the site. ATSDR and NJDHSS evaluate these contaminants in the subsequent sections of the public health assessment to determine whether exposure to the contaminants is a matter of public health significance. ATSDR and NJDHSS select and discuss these contaminants when the concentration of the contaminant is above health comparison values. These values may include ATSDR's environmental media evaluation guides (EMEGs) and cancer risk evaluation guides (CREGs), New Jersey soil action levels (NJSALs), and New Jersey maximum contaminant levels (NJMCLs). Selected contaminants are further evaluated in subsequent sections of this public health assessment to determine whether exposures to these contaminants are likely to result in harmful health effects in humans. When selected as a contaminant of concern in one medium (such as water, soil, or air), that contaminant is reported for all media. Community health concerns are also evaluated.

In the data that follow in the subsections for on-site and off-site contamination, the listing of a contaminant does not mean that exposure to the contaminant will cause adverse health effects. The list only indicates which contaminants will be evaluated further in the health assessment.

## **A. On-Site Contamination**

### **Soil**

EPA collected 2 soil samples from each of 23 locations at the site: a surface soil sample (0–3 inches below grade) and a subsurface sample (> 3 inches below grade). This health assessment reviews analytical data from the surface soil samples because human exposure to soil contamination usually results from the surface soil. Twelve soil sampling locations were on the gravel part of the roadway, seven locations were in a vacant field, and four locations were on a footpath that runs north/south on the southeastern edge of the site.

The soil samples were analyzed for PCBs, lead, cadmium, silver, chromium, and mercury. EPA had requested that analytical results for PCBs, cadmium, and lead be evaluated for potential public health threats. Lead was detected in all surface soil samples collected from the roadway, vacant field, and footpath. Lead concentrations in the roadway samples ranged from 29 ppm to 340 ppm, with an average concentration of 167 ppm. With one exception, lead concentrations in the vacant field samples ranged from 66 ppm to 546 ppm, with an average concentration of 279 ppm. The one exception for lead was a location with a concentration of 21,000 ppm. Lead concentrations in the 4 footpath samples were 29 ppm, 105 ppm, 543 ppm, and 1,770 ppm, with an average of 612 ppm. The NJDEP has established a non-residential cleanup level for lead at 600 ppm.

Cadmium was detected in 11 of the 12 roadway samples at concentrations ranging from less than 1 ppm to 19 ppm, with an average concentration of 3 ppm. Cadmium concentrations in the vacant field samples ranged from 1.1 ppm to 152 ppm, with an average concentration of 27.4 ppm. Cadmium was detected in 3 of the 4 footpath samples at concentrations ranging from 1.2 ppm to 51.4 ppm, with the average concentration being 18.9 ppm. The NJDEP non-residential soil cleanup level for cadmium is 100 ppm.

PCBs were detected in all surface soil samples collected from the roadway, vacant field, and footpath. PCB concentrations in the roadway samples ranged from 8 ppm to 340 ppm, with an average concentration of 87.5 ppm. With one exception, PCB concentrations in the vacant field samples ranged from 4.9 ppm to 100 ppm, with an average concentration of 42.4 ppm. The one exception was a vacant field sample that contained PCBs at 3,000 ppm. One footpath sample contained PCBs at a concentration of 1,000, but the other footpath samples had PCB concentrations ranging from 3.6 ppm to 90 ppm, with an average concentration of 36.5 ppm. The NJDEP non-residential soil cleanup level for PCBs is 2 ppm.

In addition, a number of surface soil and subsurface soil samples were collected from the fenced area at the back of the property. Four surface soil samples (0–3 inches or 0–6 inches) were collected and analyzed for PCBs. The PCB Aroclor 1254 was detected at the following concentrations in surface soil samples.

| Sampling Point | Concentration of Aroclor 1254 (mg/kg) |
|----------------|---------------------------------------|
| 0-6 inches     | 270                                   |
| 0-3 inches     | 4,700                                 |
| 0-6 inches     | 98                                    |
| 0-6 inches     | 51,000                                |

### **Sampling of Building**

On March 21, 1997, the EPA Environmental Response Team supervised the collection of wipe samples for PCB analysis from the interior surfaces of several on-site buildings. In addition, lead and cadmium wipe samples were collected from interior surfaces. The samples were collected by wiping a wet 3" x 3" cotton gauze pad over an area of 100 square centimeters (cm sq).

ATSDR was provided with the results from 27 samples collected from 12 buildings. Two unoccupied buildings were not sampled. The wipe sampling results indicated that elevated levels of PCBs (Aroclors 1254 and 1260) were present on various interior surfaces. Total PCBs ranged from not detectable to 680 micrograms per 100 cm sq. Approximately one-half of the wipe samples exceeded 10 micrograms per 100 cm sq (combined Aroclors 1254, 1260). The EPA has developed a PCB spill cleanup policy which requires that PCBs be cleaned to a level no higher than 10 micrograms per 100 cm sq for high contact surfaces. Cadmium concentrations ranged from not detectable to 34 micrograms per 100 cm sq. Lead concentrations ranged from not detectable to 780 micrograms per 100 cm sq.

## **B. Off-Site Contamination**

### **Residential Soil and Dust**

In October 1997 the EPA collected approximately 20 surface soil samples from each of 16 residential properties located across the street from the site. In November of that year they also collected between two and four indoor dust samples from 12 of those properties. Both the soil and dust samples were analyzed for the presence of PCBs. Soil samples contained levels of PCBs ranging from not detectable to 22 ppm. PCBs in dust samples ranged from not detectable to 205 ppm (or 117 micrograms total PCBs in sample mass).

Toxicologic evaluations of these data by the ATSDR indicate that three of the residences contained levels of PCBs in surface soil and indoor dust at a level of public health concern. One residence had levels at no public health concern; the remaining 12 were at levels of potential public health concern. Appendix 8 further discusses these evaluations.

### **Fish Sampling**

Fish sampling was conducted by the USEPA, in surface waters adjacent to and near the CDE site,



and fish were collected from the following locations:

- Three areas of the Bound Brook located downstream from the CDE site
- Two areas of New Market Pond
- The unnamed creek at a location immediately adjacent to the CDE site
- The unnamed creek at a reference location 1,000 meters upstream of the CDE site

Fish filets were analyzed for PCBs. **Table 1** shows the maximum concentrations of PCBs in the fish collected near the site.

**Table 1. Maximum concentrations of PCBs detected in fish filets**

| <u>Location</u>               | <u>Concentration</u> (parts per million) |
|-------------------------------|--|
| Bound Brook                   | 12.2                                     |
| New Market Pond               | 36.0                                     |
| Adjacent creek                | 9.8                                      |
| Reference Location (upstream) | 7.8                                      |

Note: Fish ranged in total length from 4.1 to 25.6 inches (average: 10.9 inches). Fish ranged in total weight from 0.8 to 35.4 ounces (average: 9.7 ounces). The tolerance level set by the FDA for edible fish is 2 ppm of PCB.

### **C. Quality Assurance and Quality Control**

In preparing this public health assessment, ATSDR and NJDHSS relied on the information provided in the referenced documents and assumed that adequate quality assurance and quality control measures were followed with regard to chain-of-custody, laboratory procedures, and data reporting. The validity of analyses and conclusions drawn for this health assessment is determined by the completeness and reliability of the referenced information. Environmental samples were analyzed under the guidelines of the EPA-certified laboratory program.

### **D. Physical and Other Hazards**

The CDE site is partially fenced and posted with hazard and "no trespassing" signs; the primary physical hazard to trespassers is the uneven surface of the vacant field.

## **PATHWAYS ANALYSIS**

To determine whether nearby residents or workers at the CDE site are exposed to site-related contaminants, ATSDR and NJDHSS evaluate the environmental and human components that lead to human exposure. This pathways analysis consists of five elements: (1) a source of contamination; (2) transport through an environmental medium; (3) a point of human exposure; (4) route of human exposure; and (5) an exposed population. ATSDR and NJDHSS classify exposure pathways into three groups: (1) "completed pathways," that is, those in which exposure has occurred, is occurring, or will occur; (2) "potential pathways," that is, those in which exposure might have occurred, may be occurring, or may yet occur; and (3) "eliminated pathways," that is, those that can be eliminated from further analysis because one of the five elements is missing and will never be present, or in which no contaminants of concern can be identified. A summary of the pathways for the CDE site is discussed in the following section and presented in **Table 2**.

### **A. Completed Exposure Pathways**

#### **Surface Soil Pathway (On-Site Workers and Trespassers)**

A limited sampling event was conducted at the CDE site to locate and identify potential sources of contamination. Although insufficient to fully characterize the extent of contamination of the 25-acre site, PCBs, lead and cadmium were detected at levels of public health concern. Because site access is not restricted and there are residences located nearby on Spicer Avenue, it is anticipated that on-site workers (adults), visitors and trespassers from nearby residences (adults and children) may be exposed to PCBs, lead and cadmium found in on-site soils through oral, inhalation, and dermal routes.

#### **Residential Surface Soils and Indoor Dust Pathway (Off-Site )**

Elevated levels of PCBs were detected in indoor dust and the surface soils at residential properties that may pose a health concern or potential health concern to the residents. The health evaluations for the residential properties are presented in Appendix 8. The nature and extent of off-site migration of PCB contaminated dust via wind and soil PCB contamination in this residential community has not been determined. It is likely that residents may be exposed to PCBs through ingestion and inhalation of soil and dust, as well as through dermal contact.

#### **Consumption of Fish Pathway (Bound Brook and New Market Pond)**

Local health officials report that fishing (and most likely consumption of fish) has occurred in the past and is likely occurring at the Bound Brook and the New Market Pond. Based on the available data, ATSDR concluded that PCBs in fish collected in surface water near the CDE site exceed FDA tolerance levels for PCBs in fish, and are at levels of public health concern.

Table 2 presents a summary of the completed human exposure pathways at the CDE site.

**Table 2. Completed exposure pathways**

| EXPOSURE PATHWAY ELEMENTS |                        |  |                                     |  |         |
|---------------------------|------------------------|--|-------------------------------------|--|---------|
| SOURCE                    | ENVIRONMENTAL MEDIA    | POINT OF EXPOSURE  | ROUTE OF EXPOSURE                   | EXPOSED POPULATION   | TIME    |
| CDE site                  | Surface Soil           | On-site  | Ingestion, inhalation, skin contact | Workers and trespassers                                    | Present |
| CDE site                  | Fish                   | Bound Brook and New Market Pond                                | Ingestion                           | Consumers of fish from Bound Brook and New Market Pond     | Present |
| CDE site                  | Surface soils and dust | Residential properties located across the street from CDE site | Ingestion, inhalation, skin contact | Residents living in the houses located across the CDE site | Present |

## PUBLIC HEALTH IMPLICATIONS

### A. Toxicological Evaluation

#### Introduction

In this section, NJDHSS will discuss the health effects in persons exposed to specific contaminants. To evaluate health effects, ATSDR has developed a minimal risk level (MRL) for contaminants commonly found at hazardous waste sites. The MRL is an estimate of daily human exposure to a contaminant below which noncancer adverse health effects are unlikely to occur. MRLs are developed for each route of exposure, such as ingestion and inhalation, and for the length of exposure, such as acute (less than 14 days), intermediate (15 to 364 days), and chronic (greater than 365 days). ATSDR presents these MRLs in Toxicological Profiles, which are chemical-specific profiles that provide information on health effects, environmental transport, human exposure, and regulatory status. In the following discussion, NJDHSS used information from the ATSDR Toxicological Profiles for the contaminants of concern at the site. NJDHSS uses an EPA reference dose (RfD) as a health guideline when an MRL is not available. This section contains discussion of the health effects in persons exposed to PCBs, cadmium, and lead from contaminated soil associated with the CDE site. Significance of the consumption of fish containing elevated levels of PCBs is also discussed, as is the significance of elevated PCB levels detected in the surface wipe samples collected from inside the buildings on the CDE site.

Health effects evaluations are accomplished by estimating the amount (or dose) of those contaminants that a person might come in contact with on a daily basis. This estimated exposure dose is then compared to established health guidelines. People who are exposed for some crucial

length of time to contaminants of concern at levels above established guidelines are potentially more likely to have associated illnesses or disease. The toxicological effects of the contaminants detected in the environmental media have been considered singly. The cumulative or synergistic effects of mixtures of contaminants may serve to enhance their public health significance. Additionally, children may have greater adverse health effects than adults from both individual contaminants or mixtures of contaminants. This situation depends upon the specific chemical being ingested or inhaled, its pharmacokinetics in children and adults, and its toxicity in children and adults.

The toxicological evaluation of the completed exposure pathway at the site is based upon an adult exposure duration of 40 years for trespassers and 30 years for on-site workers, and a duration of 10 years for children who are trespassers. Estimation of exposure doses for workers were based on the following assumptions: adult body weight of 70 kg; ingestion rate of 100 mg of soil per day; and 5 site visits a week for a period of 11 months per year. To estimate exposure doses of trespassers, the following assumptions were made: adult body weight of 70 kg; ingestion rate of 100 mg of soil per day; 2 site visits a week for a period of 8 months per year. For children, the following assumptions were made: child body weight of 20 kg; ingestion rate of 200 mg of soil per visit; 2 site visits a week for a period of 8 months per year.

#### *PCBs*

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. In humans, long-term exposure to PCBs can affect the skin and liver. PCBs have very low potential for producing acute toxic effects.

Workers on the site, visitors and trespassers (adults and children) visiting the CDE site may be exposed to PCBs through ingestion, and to a lesser extent, inhalation and dermal contact with contaminated surface soil. Exposure doses for PCB and subsequent lifetime excess cancer risk estimates were calculated based upon the average reported concentrations of 87.5 ppm from the roadway and the maximum concentration of 3000 ppm detected from the vacant field.

Based on an immunosuppressive effect seen in monkeys chronically exposed to PCBs, ATSDR has derived a chronic oral minimal risk level (MRL) for PCBs of 0.00002 mg/kg/day.

At the average concentration of PCBs detected (87.5 mg/kg), the estimated ingestion exposure dose for an adult worker of  $3.7 \times 10^{-5}$  mg/kg/day is slightly above the chronic oral MRL for PCBs. At such concentrations, noncarcinogenic health effects among adults are not generally expected. The estimated exposure dose for an adult trespasser exposed to the average level of PCBs is  $1.25 \times 10^{-5}$  mg/kg/day, which is below the chronic oral MRL for PCBs. At such concentrations, noncarcinogenic health effects among adults are not generally expected. However, for a child trespasser, the estimated exposure doses of  $1.57 \times 10^{-4}$  mg/kg/day would exceed the chronic oral MRL. Exposure doses do not exceed the No Observed Adverse Effect Levels for chronic exposure in humans (for effects other than cancer) cited in the ATSDR Toxicological Profile for PCB. However, at a soil concentration

of 3,000 ppm PCBs (the maximum concentration detected in any surface soil sample), the doses would exceed the MRL by more than 2 orders of magnitude for child trespassers and adult workers, and by more than 1 order of magnitude for an adult trespasser. Additional exposure to PCBs by inhalation of PCB-laden dust and dermal absorption would potentially increase the received dose in both on-site workers and children who trespass. EPA has determined that PCBs are probable human carcinogens. Carcinogenic risk based upon calculated exposures to the average soil concentration of PCBs is estimated to be no apparent increased risk to adults, and a low increased risk to children. Carcinogenic risk based upon calculated exposures to the highest levels of PCBs detected is estimated to be a moderate increased risk for adult workers and children who trespass, and a low increased risk for adult trespassers.

### *Lead*

There is no current MRL or RfD for chronic oral exposure for lead. The NJDEP has established a Residential Direct Contact Soil Cleanup Criteria level of 400 ppm lead in soil to protect against elevated blood lead levels in children. The Centers for Disease Control and Prevention (CDC) has stated that there is sufficient evidence that adverse health effects occur at blood lead levels at least as low as 10 micrograms per deciliter in children.

Lead can affect nearly every system in the body, but is particularly harmful to the developing brain and nervous system of fetuses and young children. Low blood lead levels in children are associated with decreased intelligence and impaired neurobehavioral development, decreased stature and growth, and decreased hearing acuity. Lead is considered by EPA to be a probable human carcinogen. However, there are limited data describing the carcinogenicity of lead in humans. A cancer slope factor for lead has not been established, so lifetime excess cancer risk estimates could not be calculated.

The limited analytical data indicate that elevated lead levels in surface soil samples are not widespread across the site. One sample location indicated the presence of lead at levels greater than 21,000 ppm. However, the extent of the elevated lead levels in the area around this sample location has not been adequately characterized.

### *Cadmium*

Cadmium was detected in most of the samples at average concentrations ranging from 3 ppm to 27.4 ppm. Exposure to cadmium may occur due to ingestion of contaminated soil or inhalation of cadmium-laden dust. Chronic exposure to low levels of cadmium via ingestion may adversely affect the kidneys and skeletal system. Inhalation of high levels of cadmium in air can damage the lungs, and chronic inhalation of low levels can cause kidney disease. Based on kidney effects in humans chronically exposed to cadmium, ATSDR has derived a chronic oral MRL of 0.0007 mg/kg/day. Using the standard default values described above, an adult ingesting soil containing 27.4 ppm cadmium (maximum average concentration) will receive a dose approximately 1 order of magnitude less than the MRL. A young child who trespasses on the site may receive a dose approximately 4

times less than the MRL.

#### *Indoor Wipe Sampling*

PCB concentrations at this site have been detected as high as 680 micrograms per 100 cm sq on indoor surfaces. PCBs at similar concentrations at other work places have been shown to raise serum PCB levels. EPA has developed a PCB spill clean-up policy under the Toxic Substances Control Act (TSCA). The TSCA spill policy calls for PCBs to be cleaned to 10 micrograms per 100 cm sq for high contact surfaces. In industrial settings, high contact surfaces are defined as surfaces that are repeatedly touched, often for long periods of time. Manned machinery and control panels are examples of high contact industrial surfaces. Based on assessment of risk posed by PCBs on indoor hard surfaces, the dermal exposure route would be expected to be the route of greatest concern. PCB levels on indoor surfaces of 10 micrograms per 100 cm sq are associated with an estimated increased cancer risk of  $1 \times 10^{-5}$ .

#### *Fish Sampling*

Fish were collected from three areas of the Bound Brook located downstream from the CDE site; two areas of New Market Pond; the unnamed creek at a location immediately adjacent to the CDE site; and the unnamed creek at a reference location 1,000 meters upgradient of the CDE site. The Food and Drug Administration (FDA) has set tolerances for PCBs in the edible portions of fish at 2 ppm. Tolerances are established at levels that are sufficient for the protection of public health. The tolerance level of 2 ppm PCBs was exceeded in at least one sample of each of the species collected. PCBs are persistent in the environment and break down slowly. ATSDR concludes that PCBs in fish collected in surface water near the CDE site exceed FDA tolerance levels for PCBs in fish and are at levels of public health concern.

### **B. Community Health Concerns Evaluation**

Residents had expressed concerns regarding potential health effects associated with exposure to site-related contaminants. In August, 1997, the NJDEP, the NJDHSS and the NJDOA, in coordination with the USEPA issued an interim fish advisory for the entire length of the Bound Brook, Middlesex County and posted signs warning the public not to consume fish from the entire length of the Bound Brook including the New Market Pond. This action was taken in response to a USEPA investigation of extensive PCB contamination at the CDE site. The USEPA identified levels of PCBs in carp, white suckers and largemouth bass collected from New Market Pond, an impoundment of the Bound Brook, which exceeded the U.S. Food and Drug Administration's 2.0 ppm tolerance level.

### **CONCLUSIONS**

1. On the basis of the information reviewed, the ATSDR and the NJDHSS have concluded that the CDE site in its present state poses a public health hazard. Supportive findings include PCBs in fish collected in surface water near the site exceed FDA tolerance levels for PCBs;

elevated levels of PCBs were detected in indoor dust and the surface soils at residential properties that may pose a health concern or potential health concern to the residents; and, workers and trespassers (adults and children) are likely exposed to PCBs at the site at levels of public health concern.

2. Available data and information do not adequately characterize the extent of contamination at the site. However, based on the available data the site poses a potential health threat to workers due to the presence of indoor levels of PCB contamination. Although short-term effects are not likely to occur given the levels of contamination, the site does pose a potential long-term health threat to workers. Wipe samples for lead and cadmium are useful as a qualitative indicator of contamination, but cannot be used to assess human exposures.

## **RECOMMENDATIONS**

### **Cease/Reduce Exposure**

1. Access to contaminated areas of the CDE site should be restricted as much as is practicable, and the area should be posted to warn potential site trespassers of the potential hazards.
2. Optimal dust control measures should be utilized during remediation of the site to prevent off-site migration of PCBs in dust or soil. An interim measure or permanent solution to the contaminated residential yards and/or indoor dust should be put in place as soon as possible.
3. Health education regarding appropriate cleaning methods (e.g., wet/damp dusting and mopping on floors and hard surfaces with a cleaning solution) in the homes where elevated levels of PCBs were detected in indoor dust should be conducted.
4. On-site workers should be advised of the potential health risks so that precautionary measures may be taken (for example, dust control measures).
5. Workers should discuss any health concerns regarding potential exposures with their health care providers. The ATSDR and the NJDHSS can supply appropriate information to health care providers regarding these contaminants and health.
6. Fish from the Bound Brook, the New Market Pond, Spring Lake, and their tributaries should not be consumed, as there is a fish consumption advisory currently in place for these waters.

### **Site Characterization**

1. Additional sampling should be conducted to adequately characterize the extent of contamination at the CDE site and the surrounding community.
2. Indoor air sampling should be conducted to determine the potential health threat posed by

cadmium and lead contamination because air sampling data would be more useful in estimating potential human exposures than wipe samples.

## **PUBLIC HEALTH ACTION PLAN**

The Public Health Action Plan (PHAP) for the CDE site contains a description of the actions to be taken by the ATSDR and/or the NJDHSS at or in the vicinity of the site subsequent to the completion of this public health assessment (PHA). The purpose of the PHAP is to ensure that this PHA not only identifies public health hazards but provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. Included is a commitment on the part of the ATSDR and the NJDHSS to follow up on this plan to ensure that it is implemented. The public health actions to be implemented by the ATSDR and the NJDHSS are as follows.

### **A. Public Health Actions Undertaken by the ATSDR and the NJDHSS**

1. Environmental data have been evaluated within the context of human exposure pathways and relevant public health issues.
2. The NJDEP, the NJDHSS and the NJDOA, in coordination with the EPA, issued a fish advisory for the entire length of the Bound Brook, Middlesex County and posted signs warning the public not to consume fish from the entire length of the Bound Brook including the New Market Pond. ATSDR also issued a fish consumption advisory for Bound Brook, New Market Pond, and the streams that feed into them. The advisory warned residents of contaminated fish and advised the residents that consumption of the fish could be harmful to their health.
3. NJDHSS prepared a site-specific fact sheet for the CDE site and made it available to local health agencies and other interested parties.

### **B. Public Health Actions Planned by the ATSDR and the NJDHSS**

1. This Public Health Assessment document and the Citizen's Guide will be provided to the Middlesex County Public Health Department, Middlesex County, New Jersey.
2. NJDHSS and the ATSDR will assist the Middlesex County Public Health Department by providing public health education materials and professional expertise to explain the potential implications of human exposure to PCBs.
3. As additional data becomes available on the extent and degree of off-site contamination, ATSDR and the NJDHSS will provide health education to residents on ways to reduce their potential exposure to PCBs present in indoor dust and surface soils.



4. ATSDR will provide an annual follow-up to this PHAP, outlining the actions completed and those in progress. This report will be provided to persons who request it, and it will be placed in repositories that contain copies of this PHA.

### **ATSDR Child Health Initiative**

ATSDR's Child Health Initiative recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination in their environment. Children are at greater risk than adults from certain kinds of exposures to hazardous substances emitted from waste sites. They are more likely exposed because they play outdoors and they often bring food into contaminated areas. They are shorter than adults, which means they breathe dust, soil, and heavy vapors closer to the ground. Children are also smaller, resulting in higher doses of chemical exposure per body weight. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages. Most importantly, children depend completely on adults for risk identification and management decisions, housing decisions, and access to medical care.

NJDHSS and the ATSDR evaluated the likelihood for children living near the CDE site to be exposed to contaminants at levels of public health concern. Children may be exposed to PCBs and lead at levels of public health concern, although not at levels at which adverse health effects are likely to occur.

**DOCUMENTS REVIEWED**

1. National Priorities List (NPL) Update, Cornell Dubilier Electronics Inc., South Plainfield, NJ, EPA, September 1997.
2. Health Consultation, Cornell Dubilier Electronics Incorporated, South Plainfield, Middlesex County, NJ, CERCLIS NO. NJD981557879, ATSDR, September 9, 1997.
3. Fish Consumption Advisory for Bound Brook, New Market Pond, and Spring Lake, Middlesex County, ATSDR, August 1997.
4. Bound Brook Sampling and Edible Fish Tissue Data Report, Cornell Dubilier Electronics Site, South Plainfield, New Jersey, Environmental Response Team Center, Office of Emergency and Remedial Response, EPA, July 1997.
5. Health Consultation, Cornell Dubilier Electronics Incorporated, South Plainfield, Middlesex County, NJ, CERCLIS NO. NJD981557879, ATSDR, July 31, 1997.
6. Polychlorinated Biphenyls (PCBs) and Cornell Dubilier (Hamilton Industrial Park): Facts for Workers and Area Residents, ATSDR and South Plainfield, New Jersey, Health Department, May 1997.
7. Health Consultation, Cornell Dubilier Electronics Site (20GZ) (a.k.a. Hamilton Industrial Park), South Plainfield, Middlesex County, NJ, ATSDR, May 27, 1997.
8. ATSDR Record of Activity, Cornell Dubilier Electronics Site, South Plainfield, Middlesex County, NJ, ATSDR, March 11, 1997.
9. ATSDR Record of Activity, Cornell Dubilier Electronics, Log # 96-4046, S. Kinsler, September 17, 1996.
10. ATSDR Record of Activity, Cornell Dubilier Electronics Site, South Plainfield, Middlesex County, NJ, ATSDR, October 7, 1996.
11. Removal Site Evaluation for the Cornell Dubilier Electronics Site (A.K.A.: Hamilton Industrial Park), South Plainfield, Middlesex County, New Jersey. O.S.C., Removal Action Branch, Region II, EPA.
12. Toxicological Profile for Lead, Update, US Department of Health and Human Services, Public Health Service, ATSDR, April 1993.
13. Toxicological Profile for Cadmium, Update, US Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, April 1993.

14. Toxicological Profile for Polychlorinated Biphenyls, US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
15. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, US Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.
16. Preventing Lead Poisoning in Young Children, Centers for Disease Control and Prevention, October 1991.

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Superfund Site Assessment Branch  
Division of Health Assessment and Consultation

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Trenton, NJ 08625-0360

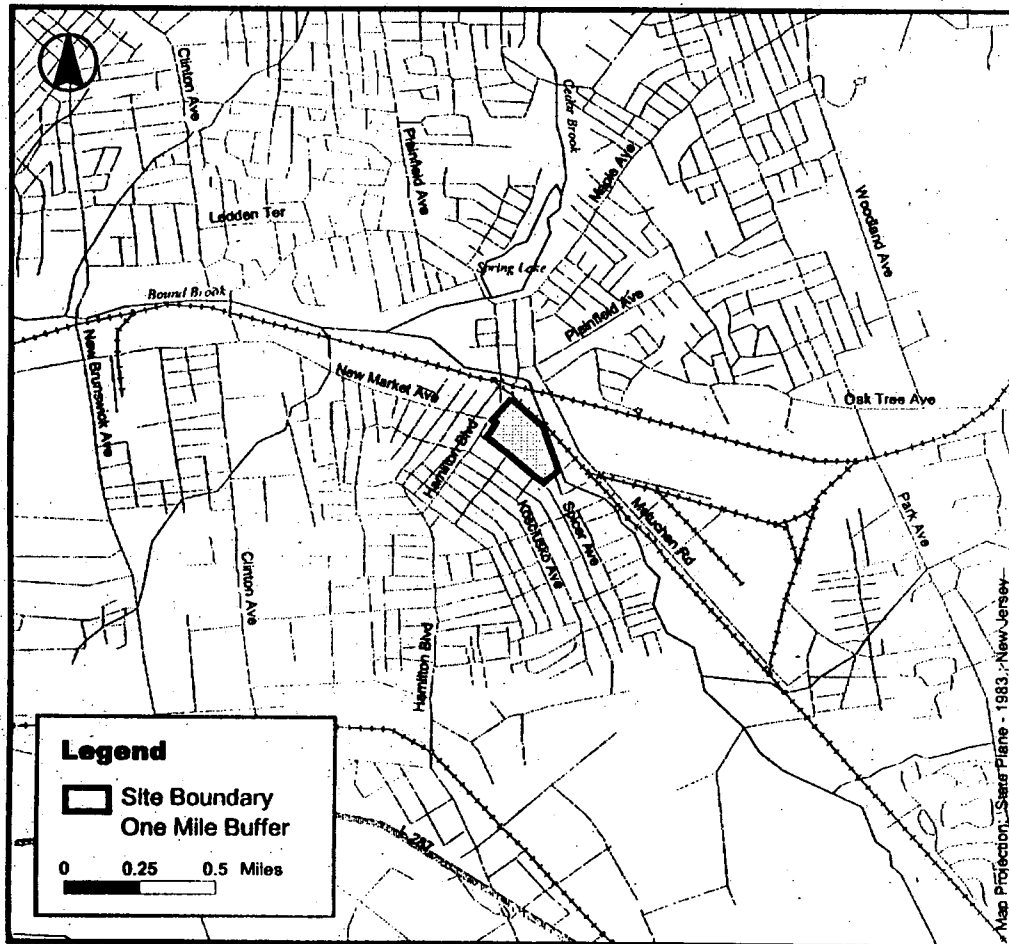
**Appendix 1 - Demographic Information**

Figure 1 - Demographic Information

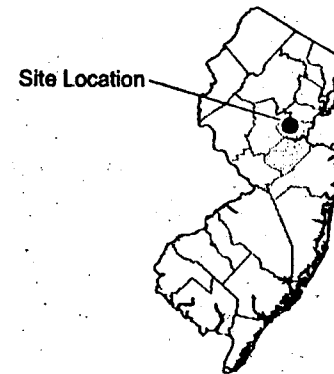
# Cornell Dubilier Electronics Inc.

South Plainfield, New Jersey

CERCLIS No. NJD981557879



Base Map Source: 1995 TIGER/Line Files



## Middlesex County, New Jersey

### Demographic Statistics Within One Mile of Site\*

|                                |      |
|--------------------------------|------|
| Total Population               | 9889 |
| White                          | 8570 |
| Black                          | 586  |
| American Indian, Eskimo, Aleut | 20   |
| Asian or Pacific Islander      | 549  |
| Other Race                     | 164  |
| Hispanic Origin                | 448  |
| Children Aged 6 and Younger    | 990  |
| Adults Aged 65 and Older       | 1090 |
| Females Aged 15 - 44           | 2362 |
| Total Housing Units            | 3232 |

Demographics Statistics Source: 1990 U.S. Census

\*Calculated using an area-proportion spatial analysis technique

Public Comment Draft

*Public Comment Draft*

Appendix 2 - Health Consultation ( September 1996)



# ATSDR Record of Activity

ROUTING:  
E. Skowronski  
CS FILE

UID #: SVK5 Date: 9-17-96 Time: \_\_\_\_\_ am \_\_\_\_\_ pm

Site Name: Cornell-Dubilier Electronics City: South Plainfield  
City: Middlesex State: NJ

CERCLIS #: \_\_\_\_\_ Cost Recovery #: 20GZ Region: 2

Site Status: (1)    NPL    ☒ Non-NPL    RCRA    Non-Site specific    Federal  
(2)    ☒ Emergency Response    Remedial    Removal    Other:

## Activities

☐ Incoming Call ☐ Public Meeting ☐ Health Consult ☐ Site Visit  
☐ Outgoing Call ☐ Other Meeting ☐ Health Referral ☐ Info Provided  
☐ Conference Call ☒ Data Review ☐ Written Response ☐ Training  
☐ Incoming Mail ☐ Other

Requestor and Affiliation: (1) Nick Macriples

Phone: \_\_\_\_\_ Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

## Contacts and Affiliation

(31) Steve Jones ( ) \_\_\_\_\_  
( ) \_\_\_\_\_ ( ) \_\_\_\_\_

|               |               |                 |               |               |               |
|---------------|---------------|-----------------|---------------|---------------|---------------|
| 1-EPA         | 2-USCG        | 3-OTHER FED     | 4-STATE ENV   | 5-STATE HLTH  | 6-COUNTY HLTH |
| 7-CITY HLTH   | 8-HOSPITAL    | 9-LAW ENFORCE   | 10-FIRE DEPT  | 11-POISON CTR |               |
| 12-PRIV CITZ  | 13-OTHER      | 14-UNKNOWN      | 15-DCD        | 16-DOE        |               |
| 17-NOAA       | 18-OTHR STATE | 19-OTHR CNTY    | 20-OTHR CITY  | 21-INTL       |               |
| 22-CITZ GROUP | 23-ELECT. OFF | 24-PRIV. CO     | 25-NEWS MEDIA | 26-ARMY       |               |
| 27-NAVY       | 28-AIR FORCE  | 29-DEF LOG AGCY | 30-NRC        | 31-ATSDR      |               |

## Program Areas

☐ Health Assessment ☐ Health Studies ☐ Tox Info-profile  
☐ Worker Health ☐ Petition Assessment ☐ Health Surveillance  
☐ Tox Info-Nonprofile ☐ Admin ☐ Emergency Response  
☐ Disease Registry ☐ Subst-Spec Research ☐ Other (Technical Assist)  
☒ Health Consultation ☐ Exposure Registry ☐ Health Education

## Background and Statement of Issues:

The Region 2 U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review analytical data from a fenced area at the Cornell-Dubilier Electronics Site in South Plainfield, New Jersey, and determine if polychlorinated biphenyls (PCBs) in soil are at levels of public health concern.

The fenced area, which covers 1.5 acres, is the location of a truck

driving school. The school has reportedly been in operation since February 1996, 8 hours per day, 6 days per week. Tractor trailers maneuver in the fenced area, while instructors outside of the vehicles guide the drivers through their training. An office trailer, parking area, and 2 canopied rest areas with benches are in the fenced area. A barbecue is located near the office trailer.

Although the composition of the ground surface within the fenced area varies, it generally consists of a compacted mixture of soil, rock, and crushed brick. When weather conditions are dry, dust is airborne within the fenced area during truck maneuvers; this may result in significant exposure to PCB containing dust via inhalation, and may result in offsite migration of PCBs.

A number of surface soil and subsurface soil samples were collected from the fenced area and adjacent areas. Four surface soil (0 - 3 inches or 0 - 6 inches) were collected and analyzed for PCBs (exposure to soil contamination usually occurs in the top 3 to 6 inches, so subsurface soil analytical data are not evaluated for potential public health threats). Aroclor 1254 was detected at the following concentrations in surface soil samples.

| Sampling Point     | Concentration of<br>Aroclor 1254 (mg/kg) |
|--------------------|--|
| S23 (0 - 6 inches) | 270                                      |
| S25 (0 - 3 inches) | 4,700                                    |
| S24 (0 - 6 inches) | 98                                       |
| S29 (0 - 6 inches) | 51,000                                   |

#### Discussion:

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB laden dust, or direct dermal contact with PCBs in soil or dust.

In humans, long-term exposure to PCBs can affect the skin and liver: reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [1,2].

Based on an immunosuppressive effect seen in monkeys chronically exposed to PCBs, ATSDR has derived a chronic oral Minimal Risk Level (MRL) for PCBs of 2.0E-05 mg/kg/day; an MRL is defined as an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure.

Using standard default values (70 kg adult ingesting 50 milligrams of soil per day), an adult ingesting soil containing 51,000 ppm PCBs will receive a dose 3 orders of magnitude greater than the MRL. At a soil concentration of 4,700 mg/kg PCBs, the dose would exceed the MRL by 2 orders of magnitude. Additional exposure to PCBs by potential

Inhalation of dust and dermal absorption would potentially increase the received dose.

#### Conclusions:

Based on review of the data, ATSDR concludes:

PCBs are present in surface soil in the fenced area at levels of public health concern.

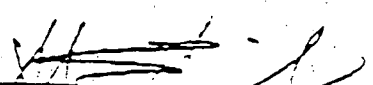
PCBs may be migrating off-site during dry conditions when dust is generated during truck maneuvers.

The extent of PCB contamination in soil in the fenced area has not been adequately defined.

#### Recommendations:

1. Immediately stop exposure to PCBs in soil in the fenced area.
2. Prevent off-site migration of PCBs in dust or soil.
3. Characterize the extent of contamination in the fenced area.

If further clarification is required, or additional information becomes available, please do not hesitate to contact this office at 404/639-0616.

  
Steven Kinsler, Ph.D.

Date: September 19, 1996

Concurrence: 

Date: 9-19-96

#### References

1. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993
2. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.

cc:

PERIS

Ed Skowronski, Acting Chief, EICB

Steven Kinsler, Toxicologist, CS

Steve Jones, Region 2 ATSDR Regional Representative

Appendix 3 - Health Consultation ( October 1996)

# ATSDR Record of Activity

FEB 9 2 55 PM '97

ROUTING:

~~E. Skowronski~~  
CS FILE

UID #: svk5 Date: 10-7-96 Time: \_\_\_\_\_ am \_\_\_\_\_ pm \_\_\_\_\_

Site Name: Cornell-Dubilier Electronics City: South Plainfield  
Cnty: Middlesex State: NJ

CERCLIS #: \_\_\_\_\_ Cost Recovery #: 20GZ Region: 2

Site Status: (1) ☐ NPL ☒ Non-NPL ☐ RCRA ☐ Non-Site specific ☐ Federal  
(2) ☐ Emergency Response ☐ Remedial ☐ Removal ☐ Other:

## Activities

☐ Incoming Call ☐ Public Meeting ☐ Health Consult ☐ Site Visit  
☐ Outgoing Call ☐ Other Meeting ☐ Health Referral ☐ Info Provided  
☐ Conference Call ☒ Data Review ☐ Written Response ☐ Training  
☐ Incoming Mail ☐ Other

Requestor and Affiliation: (1) Nick Macriples

Phone: \_\_\_\_\_ Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

## Contacts and Affiliation

(31) Steve Jones ( ) \_\_\_\_\_  
(31) Arthur Block ( ) \_\_\_\_\_

|               |                |                 |               |               |              |
|---------------|----------------|-----------------|---------------|---------------|--------------|
| 1-EPA         | 2-USCG         | 3-OTHER FED     | 4-STATE ENV   | 5-STATE HLT   | 6-COUNTY HLT |
| 7-CITY HLTH   | 8-HOSPITAL     | 9-LAW ENFORCE   | 10-FIRE DEPT  | 11-POISON CTR |              |
| 12-PRIV CITZ  | 13-OTHER       | 14-UNKNOWN      | 15-DOD        | 16-DOE        |              |
| 17-NCAA       | 18-OTHER STATE | 19-OTHER CNTY   | 20-OTHER CITY | 21-INTE       |              |
| 22-CITZ GROUP | 23-ELECT. OFF  | 24-PRIV. CO     | 25-NEWS MEDIA | 26-ARMY       |              |
| 27-NAVY       | 28-AIR FORCE   | 29-DEF LOG AGCY | 30-NRC        | 31-ATSDR      |              |

## Program Areas

☐ Health Assessment ☐ Health Studies ☐ Tox Info-profile  
☐ Worker Health ☐ Petition Assessment ☐ Health Surveillance  
☐ Tox Info-Nonprofile ☐ Admin ☐ Emergency Response  
☐ Disease Registry ☐ Subst-Spec Research ☐ Other (Technical Assist)  
☒ Health Consultation ☐ Exposure Registry ☐ Health Education

## Background and Statement of Issues

The Region 2 U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review analytical data from the Cornell-Dubilier Electronics Site in South Plainfield, New Jersey, and determine if contaminants in soil are at levels of public health concern [1].

The Cornell-Dubilier Electronics Site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. The approximately 25 acre site is located in an industrial/commercial/residential area and is bordered by commercial businesses and residences on the south, west and north, and on the southeast, east, and northeast by an unnamed tributary to Bound Brook [2]. It is estimated that 540 persons reside within 0.25 miles of the site; the nearest residence is approximately 200 feet from the site [2].

During the 1950s, Cornell-Dubilier Electronics, Inc. manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled onsite and transformer oils contaminated with PCBs were reportedly dumped directly onto site soils. The company vacated the site in the early 1960s [2].

The site is currently known as the Hamilton Industrial Park and is occupied by an estimated 15 commercial businesses. Numerous companies have operated at the site as tenants over the years [2]. A paved driveway is used to enter the park; the pavement ends within 100 yards of entering the park. It has been observed that vehicles entering the industrial park during dry conditions create airborne dust [2]. The driveway leads into a dirt/gravel/stone roadway that nearly encircles the business structures at the site. The roadway separates the structures from a heavily vegetated vacant field. Currently, there are no access restrictions at the site other than a 1.5 acre fenced area in the southeast portion of the vacant field that was formerly used by a truck driving school [2]. Analytical data of contaminants in soil in the fenced area were evaluated in a previous ATSDR Record of Activity (AROA) [3].

On June 27 and 29, 1996, the U.S. EPA Superfund Technical Assessment and Response Team (START) collected 2 soil samples from each of 23 locations at the site; a surface soil (0 - 3 inches) sample and a subsurface (greater than 3 inches) sample were collected from each location.

Twelve soil sampling locations were on the gravel part of the roadway, 7 locations were in the vacant field, 4 locations were on the footpath that runs north/south on the southeastern edge of the site. Because human exposure to contaminants in soil usually occurs in the top 0 to 3 inches of soil, this consultation will review analytical data from the surface soil samples only.

The soil samples were analyzed for Target Compound List Polychlorinated Biphenyls (TCB PCBs) and Target Analyte List (TAL) lead, cadmium, silver, chromium, and mercury [2]. Sample locations were selected to locate and identify potential sources of contamination at the site [2]. The EPA has requested that analytical results for polychlorinated biphenyls (PCBs), lead, and cadmium be evaluated for potential public health threats [1].

## Analytical Results

### Lead

Lead was detected in all surface soil samples collected from the roadway, vacant field, and footpath. Lead concentrations in the roadway samples ranged from 29 parts-per-million (ppm) to 340 ppm (average concentration = 167 ppm). Lead concentrations in the 5 vacant field samples with detectable levels of lead ranged from 66 ppm to 546 ppm (average concentration = 279 ppm), except for 2 samples (sample plus duplicate) collected at 1 location (S6/S26); lead concentrations in these 2 samples were 21,800 ppm and 22,500 ppm. Lead concentrations in the 4 footpath samples were 29 ppm, 105 ppm, 543 ppm and 1,770 ppm. Exclusive of the 2 samples containing lead at 21,800 ppm and 22,500 ppm lead, only 1 sample of the remaining 21 samples contained lead at a concentration greater than 1,000 ppm (1,770 ppm).

### Cadmium

Cadmium was detected in 11 of the 12 roadway samples at concentrations ranging from less than 1.0 ppm to 19.3 (average concentration = 3.0 ppm). Cadmium concentrations in the vacant field samples ranged from 1.1 ppm to 152 ppm (average concentration = 27.4 ppm). Cadmium was detected in 3 of the 4 footpath samples at concentrations ranging from 1.2 ppm to 51.4 ppm (average concentration = 18.9 ppm).

### PCBs

PCBs were detected in all surface soil samples collected from the roadway, vacant field, and footpath. PCB concentrations in the roadway samples ranged from 8.0 ppm to 340 ppm (average concentration = 87.5 ppm). PCB concentrations in the vacant field samples ranged from 4.9 ppm to 100 ppm (average concentration = 42.4 ppm), except for one vacant field sample that contained PCBs at 3,000 ppm. PCB concentrations in the footpath samples ranged from 3.6 ppm to 90 ppm (average concentration = 36.5 ppm), except for one footpath sample that contained PCBs at 1,000 ppm.

## Discussion

A limited sampling event was conducted at the Cornell-Dubilier site to locate and identify potential sources of contamination. Twenty-three sample locations were selected; this limited sampling is not an adequate characterization of the extent of contamination at the 35 acre site.

Because site access is not restricted and there are residences located nearby, it is anticipated that populations potentially exposed to contamination on-site will include on-site workers (adults) and trespassers from nearby residences (adults and children). It is not anticipated that infants and/or toddlers will frequently or regularly

access the site.

#### Lead

The Centers for Disease Control and Prevention (CDC) has indicated there is sufficient evidence that adverse health effects occur at blood lead levels at least as low as 10 micrograms per deciliter (ug/dL) in children [4]. Young children and fetuses are especially sensitive to the toxic properties of lead. Factors accounting for this susceptibility include the following: 1) the immaturity of the blood-brain barrier which allows entry of lead into the immature nervous system, 2) hand-to-mouth behavior and pica behavior (ingestion of nonfood items, such as soil) which leads to consumption of lead-contaminated media, 3) enhanced gastrointestinal absorption of lead (affected by the nutritional status of the child), 4) low body weight, and 5) the ready transfer of lead across the placenta to the developing fetus [4]. These factors put children exposed to lead at a much higher risk of developing adverse health effects than adolescents and adults.

Studies indicate that ingestion and inhalation of lead-contaminated media can contribute to elevated blood lead levels [4]. Blood lead levels in young children have been reported to be raised, on average, about 5 ug/dL for every 1,000 milligrams of lead per kilogram of soil or dust, and may increase 3 to 5 times higher than the mean response depending on play habits and mouthing behavior [4]. Blood lead levels of 10 ug/dL and above have been associated with adverse health effects such as developmental and hearing impairment, and reductions in intelligence quotient (IQ) in children [4,5].

The limited analytical data indicate that elevated lead levels in surface soil are not widespread across the site. One sample location (S6/S26) had very elevated levels of lead (greater than 21,000 ppm lead); however, the extent of the elevated lead levels in the area around this sample location has not been adequately characterized.

#### Cadmium

Cadmium was detected in most of the collected samples at average concentrations ranging from 3.0 ppm to 27.4 ppm. Exposure to cadmium may occur due to ingestion of contaminated soil or inhalation of cadmium-laden dust.

Chronic exposure to low levels of cadmium via ingestion may adversely affect the kidneys and skeletal system [6]. Inhalation of high levels of cadmium in air can damage the lungs, and chronic inhalation of low levels can cause kidney disease [6].

Based on kidney effects in humans chronically exposed to cadmium, ATSDR has derived a chronic oral Minimal Risk Level (MRL) of 7.0E-04 mg/kg/day; an MRL is defined as an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure.



Using standard default values (70 kg adult ingesting 50 milligrams of soil per day), an adult ingesting soil containing 27.4 ppm cadmium (maximum average concentration) will receive a dose approximately 1 order of magnitude less than the MRL. Assuming that young children (30 kg body weight) may trespass on the site and ingest soil (200 milligrams per day), a child ingesting soil that contains 27.4 ppm cadmium will receive a dose approximately 4 times less than the MRL.

#### PCBs

Elevated levels of PCBs were detected in surface soil samples collected at the site. Average concentrations of PCBs were 87.5 ppm, 42.4 ppm, and 36.5 ppm in the roadway, vacant field, and footpath surface soil samples, respectively.

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [7,8]. PCBs have very low potential for producing acute toxic effects [8].

Based on an immunosuppressive effect seen in monkeys chronically exposed to PCBs, ATSDR has derived a chronic oral Minimal Risk Level (MRL) for PCBs of  $2.0E-05$  mg/kg/day; an MRL is defined as an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure.

Using standard default values (70 kg adult ingesting 50 milligrams of soil per day), an adult ingesting soil containing 36.5 ppm PCBs (lowest average concentration of the 3 areas sampled) will receive a dose approximately equivalent to the MRL. At a soil concentration of 3,000 ppm PCBs (maximum concentration detected in any surface soil sample), the dose would exceed the MRL by over 2 orders of magnitude.

Assuming that young children (30 kg body weight) may trespass on the site and ingest soil (200 milligrams per day), a child ingesting soil that contains 36.5 ppm PCBs will receive a dose approximately 1 order of magnitude greater than the MRL. At a soil concentration of 3,000 ppm PCBs, the dose would exceed the MRL by over 3 orders of magnitude. Additional exposure to PCBs by inhalation of PCB-laden dust and dermal absorption would potentially increase the received dose in both on-site workers and children that trespass.

#### Conclusions

Based on the limited analytical data collected at the Cornell-Dubilier Site, ATSDR concludes the following:

The limited sampling (23 sample locations for 25 acres) is not

adequate to completely characterize the extent of contamination at the site.

Lead concentrations that present a public health concern are not widespread across the site; lead concentrations in 1 area (sample location S6/S26) are at levels of public health concern.

The extent of lead contamination in the area of sample location S6/S26 has not been adequately defined.

Cadmium is not present in surface soil on-site at levels of public health concern.

PCBs are present at levels of public health concern in sampled areas at the site; chronic exposure to PCBs in surface soil presents a public health concern to on-site workers and trespassers.


#### Recommendations

Conduct additional sampling to adequately characterize the extent of contamination at the site.

Prevent exposure to PCBs in surface soil at levels of public health concern.

Prevent off-site migration of PCBs in dust or soil.

If further clarification is required or if additional information becomes available, please do not hesitate to contact this office at 404/639-0616.

  
Steven Kinsler, Ph.D.

Date: October 30, 1996

Concurrence: 

Date: 10/30/96

#### References

1. Personal Communication, S. Jones/S. Kinsler, September 23, 1996.
2. Personal Communication Series, S. Jones/S. Kinsler, N. Magriples/S. Kinsler, October 1996.
3. ATSDR Record of Activity (AROA), Cornell-Dubilier Electronics, South Plainfield, New Jersey, Log # 96-4046, S. Kinsler, 9-17-96.

Name: Cornell-Dubilier Electronics  
LOG #: 97-1004

4. Preventing Lead Poisoning in Young Children, A Statement by The Centers for Disease Control - October 1991, U.S. Department of Health and Human Services, Public Health Service.
5. Toxicological Profile for Lead, Update, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, April 1993.
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7. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
8. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.

cc:

PERIS

Ed Showronski, Acting Chief, EICB

Steven Kinsler, Toxicologist, CS

Steve Jones, Region 2 ATSDR Regional Representative

Arthur Block, Region 2 ATSDR Senior Regional Representative

David Hutchins, TFO

Appendix 4 - Health Consultation (May 1997)

## Health Consultation

Cornell-Dubilier Electronics (20GZ)  
(aka Hamilton Industrial Park)  
South Plainfield, New Jersey  
NJD981557879

May 27, 1997

U.S. Department of Health and Human Services  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Exposure Investigation and Consultation Branch  
Atlanta, Georgia 30333

## Background and Statement of Issues:

The Region II, U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) comment on the public health threat posed by indoor polychlorinated biphenyls (PCB) contamination at the Cornell-Dubilier Site in South Plainfield, New Jersey.

The Cornell-Dubilier Electronics, Inc. facility operated on the 25 acre site until the early 1960's. The company manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were land filled on-site and transformer oils contaminated with PCB were reportedly dumped onto site soils. The site is currently known as the Hamilton Industrial Park and is occupied by approximately 15 industrial businesses.

At the request of EPA Region II, the NJDHSS provided a health consultation for the site in March 1997 in which they performed a pathway analysis. Consequently, through negotiations with the responsible parties, interim measures were taken by EPA to reduce exposures at the site. In addition, a health consultation was conducted by ATSDR in October 1996 commenting on soil PCB levels on site [1]. ATSDR concluded that the PCBs in surface soils posed a long-term health concern for on-site workers and trespassers. The NJDHSS has also developed a fact sheet for the site describing the contamination and addressing health concerns of workers and area residents.

On March 21, 1997, the EPA Environmental Response Team (EPAERT) supervised the collection of wipe samples from the interior surfaces of several on-site buildings. In addition, lead and cadmium wipe samples were collected from interior surfaces. The samples were collected by wiping a wet 3 inch by 3 inch cotton gauze pad over an area of 100 square centimeters.

ATSDR was provided results from 27 samples collected from 12 buildings. Two unoccupied buildings were not sampled. The wipe sampling results indicated that elevated levels of PCBs (Aroclors 1254, 1260) were present on various interior surfaces (see attached tables). Total PCBs ranged from non-detect to 680 micrograms per 100 square centimeters ( $\mu\text{g}/100\text{cm}^2$ ). Approximately one-half of the wipe samples exceeded 10  $\mu\text{g}/\text{cm}^2$  (combined Aroclors 1254, 1260).

Cadmium concentrations ranged from non-detect to 34  $\mu\text{g}/100\text{cm}^2$ . Lead concentrations ranged from non-detect to 780  $\mu\text{g}/100\text{cm}^2$  (see attachment).

## Discussion:

### PCBs:

Although PCBs are no longer made in the United States, many transformers and capacitors still contain PCBs. Spills and improper disposal and handling of PCBs, such as the case at this site, have resulted in environmental contamination. Since PCBs persist in the environment for years, and also have the ability to collect in human fatty tissue, the PCBs represent a long-term health threat to humans [2].

In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [2,3]. Short-term exposure of humans to elevated levels of PCBs can result in chloracne. Exposure can occur through the inhalation and ingestion of PCB-contaminated dust, or through the absorption of PCBs through the skin. Workers can also carry contamination home on shoes and clothing exposing other members of the family.

PCB concentrations at this site have been detected as high as 680  $\mu\text{g}/100\text{cm}^2$  on indoor surfaces. PCBs at similar concentrations at other work places have been shown to raise serum PCB levels. For example, Christiani et. al. measured serum PCB levels in employees working in areas with surface concentrations of PCBs averaging 161  $\mu\text{g}/100\text{cm}^2$  [4]. Serum PCB levels in the workers ranged from 3.1 to 65 parts per billion (ppb) with a mean concentration of 15.3 ppb. The average background blood serum concentration among populations in the United States was 5 to 7.7 ppb [2]. Medical evaluation of the workers in the Christiani study showed neither chloracne or other symptomatic manifestation of toxicity nor a relationship between liver enzyme levels and serum PCB levels. Numerous studies have attempted to correlate serum PCB levels with liver associated enzymes in PCB-exposed workers, however, no conclusive association has been found [2].

EPA has developed a PCB spill cleanup policy under the Toxic Substances Control Act (TSCA). The TSCA policy is considered conservative and protective of public health. The TSCA spill policy calls for PCBs to be cleaned to 10  $\mu\text{g}/100\text{cm}^2$  for high contact surfaces. High contact in industrial settings are defined as surfaces which are repeatedly touched, often for long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. Based on assessments of risk posed by PCBs on indoor hard surfaces, the dermal exposure route would be expected to be the route of greatest concern [5]. PCB levels on indoor surfaces of 10  $\mu\text{g}/100\text{cm}^2$  are associated with an oncogenic risk of  $1 \times 10^{-5}$ .

### Lead and Cadmium:

The wipe samples that were collected indicated the presence of cadmium and lead on interior surfaces. However, it is difficult to assess the health risk posed by this contamination because of the uncertainty in estimating the exposure dose of a metal from a contaminated surface. Air sampling data would provide a better estimate of potential human exposure to cadmium and lead, since inhalation of contaminated dusts is the most likely route of exposure.

### Conclusions:

1. Based on the available information, the site poses a potential health threat to workers due to the presence of indoor levels of PCB contamination. Although short-term effects are not likely to occur given the levels of contamination, the site does pose a potential long-term health threat to workers. Family members may also be exposed to PCBs carried home on the shoes or clothing of workers.
2. Wipe samples for lead and cadmium are useful as a qualitative indicator of contamination, but cannot be used to assess human exposures. Air sampling data would be more useful in quantitatively estimating potential human exposures.

### Recommendations:

1. Have surfaces remediated to comply with TSCA PCB Spill Policy.
2. Consider conducting indoor-air sampling to determine the potential health threat posed by cadmium and lead contamination. If the building is unoccupied, conduct aggressive sampling to simulate activity.
3. If any workers are experiencing health effects, have them evaluated by a health care provider for PCB exposure.
4. This site will be considered for an exposure investigation by the ATSDR Exposure Investigation Section.

Timothy Walker, M.S.  
Environmental Health Scientist

Concurred: Kenneth G. Orloff, Ph.D., DABT  
Senior Toxicologist



## References:

1. ATSDR Health Consultation for the Cornell-Dubilier Site, October 7, 1996.
2. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
3. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.
4. Persistently Elevated Polychlorinated Biphenyl Levels from Residual Contamination of Workplace Surfaces. David C. Christiani et al., American Journal of Industrial Medicine, 10:143-151, 1986.
5. Polychlorinated Biphenyls Spill Cleanup Policy, 40 CFR Part 761, U.S. EPA. April 2, 1987.

CC:

EICB File (E32)

David Hutchins, TPO (E32)

PERIS (E32)

Mr. Jim Pasquale

Program Manager

Division of Occupational and  
Environmental Health

New Jersey Department of Health

210 South Broad Street

Trenton, New Jersey 08625-0360

Send to:

Arthur Block

Sr. ATSDR Regional Representative

EPA Region II

290 Broadway, North

18th Floor

New York, NY 10007

Appendix 5 - Health Consultation (July 1997)

# ATSDR Record of Activity

ID #: \_\_\_\_\_

Date: 3/11/97

Time: \_\_\_\_\_ am \_\_\_\_\_ pm \_\_\_\_\_

Site Name: Cornell-Dubilier Electronics (AKA Hamilton Industrial Park)

City: South Plainfield Cnty: Middlesex State: NJ

ERCLIS #: NJ981557879

Cost Recovery #: 20GZ

Region: 2

Site Status (1) ☐ NPL ☒ Non-NPL ☐ RCRA ☐ Non-Site specific ☐ Federal  
(2) ☐ Emergency Response ☐ Remedial ☐ Other

## Activities

Incoming Call ☐ Public Meeting ☒ Health Consult ☒ Site Visit  
Outgoing Call ☒ Other Meeting ☐ Health Referral ☒ Info Provided  
Conference Call ☒ Data Review ☐ Written Response ☐ Training  
☒ Incoming Mail ☐ Other

Requestor and Affiliation: Michael Bonk, Health Officer, South Plainfield Health Department

Phone: 908-226-7634

Address: 2480 Plainfield Avenue

City: South Plainfield

State: NJ

Zip Code: 07081

## Contacts and Affiliation

( ) Arthur Block (Region 2) (2) Eric Wilson (Region 2) ( ) \_\_\_\_\_ ( ) \_\_\_\_\_

1=ATSDR 2=EPA 3=USCG 4=DOD 5=DOE 6=NOAA 7=Natl Respsn Ctr 8=other Fed  
9=State Hlth 10=State Env 11=other state 12=County Hlth 13=other county 14=City Hlth 15=other city  
16=Hospital 17=Poison Ctr 18=Fire Dept 19=Law Enf 20=Priv Citzn 21=Citzn Group 22=Elected Off  
23=Priv Co. 24=News Media 25=Internatl 26=Other: \_\_\_\_\_ 27=Unknown

## Program Areas

Health Assessment ☐ Health Studies ☒ Tox Info-profile ☐ Worker Hlth  
Petition Assessment ☐ Health Surveillnc ☒ Tox Info-Nonprofile ☐ Admin  
Emergency Response ☐ Disease Registry ☐ Subst-Spec Resch ☐ Other  
☒ Health Consultation ☐ Exposr Registry ☒ Health Education

## Narrative Summary:

At the request of the Health Officer of the Borough of South Plainfield, a meeting was held on February 5, 1997. The meeting was attended by representatives of the South Plainfield Health Department (SPHD), the New Jersey Department of Health and Senior Services (NJDHSS), the Agency for Toxic Substances and Disease Registry (ATSDR) Region II, and the U. S. Environmental Protection Agency (EPA) Region II.

During the period 1936-1962, Cornell-Dubilier Electronics (CDE) manufactured electrical components, including capacitors, on this 25 acre property which is a potential NPL site. During some portion of that period it has been reported the CDE also tested transformer oils on the property. As a result, it has been alleged that CDE disposed of PCB-containing oil and other hazardous materials directly on the soil on site property. The CDE property, now known as Hamilton Industrial Park, is an actively used industrial property which includes numerous brick buildings and several Quonset huts. Approximately 15 tenant commercial businesses which employ some two hundred individuals currently occupy the property.

### **Summary of Previous Environmental Characterization**

Environmental sampling of the property has been conducted by EPA on several occasions. In June, 1994 surface water (four locations), surface soil (six locations), and sediment (four locations) samples were taken on the property. In April, 1996 four air samples were taken along the perimeter of the fenced area in which a truck driving school operated. In June 1996 additional sampling (forty-eight soil samples and one sediment sample) was conducted in conjunction with pre-remedial site assessment. In July, 1996 eighteen additional soil samples were obtained, including six surface soil samples from within the fenced area, and twelve samples from six test pits dug on the property. These data have been summarized in the EPA Removal Site Evaluation dated January 9, 1997.

### **Public Health Implications of Site Contaminants**

The surface soil sampling events have indicated the presence of polychlorinated biphenyls (PCBs), lead (Pb), and cadmium (Cd) at levels of public health concern at various locations on site property. Based on the results of the June, 1996 sampling event, which showed high PCB levels in the surface soil of the fenced 'unpaved' 1.5 acre area, the permit for operating a truck driving school within this area was revoked by the Borough of South Plainfield in October, 1996. This action was taken in order to interrupt the potential exposure pathway which could result from inhalation of entrained fugitive dust, as concluded in the ATSDR Record of Activity (AROA) Data Review of September 17, 1996.

However, an additional potential public health risk remains at the CDE site due to generation (and possible inhalation) of fugitive dusts by vehicular traffic on the dirt/gravel road which traverses the property. Fugitive dust might be inhaled by workers on the property, or carried off the property by ambient wind. In addition, inhalation/ingestion could also result from dirt/dust carried inside buildings on site property (or possibly carried off-site) on workers' shoes.

### **Recommendation for Interim Action by EPA to Protect Public Health**

It has been agreed by NJDHSS, ATSDR, and EPA that a potential pathway exists for human exposure via inhalation of fugitive dust which contains PCBs. Consequently, it is recommended that, as soon as practicable, EPA, with the assistance of NJDHSS and ATSDR, determine and take all necessary and appropriate interim actions which would be required to interrupt the potential exposure pathway caused by dust generation on the dirt/gravel road which traverses the site property. Such action will serve to terminate any possible previous exposure to entrained dust by workers on the site and nearby residents, and would facilitate further permanent remedial actions.

As requested by Mr. Bonk, the Health Officer for South Plainfield (see attached letter). NJDHSS/ATSDR will assist the South Plainfield Health Department by providing public health education materials and professional expertise to explain the potential implications of human exposure to PCBs. Such assistance would be primarily in the form of "fact sheets" on the potential health effects which might result from exposure to these contaminants, however, in addition, professional expertise would be provided as needed at public availability sessions which might be scheduled by the SPHD. (The attached "fact sheet" on PCBs was provided by NJDHSS for use by ATSDR, the South Plainfield Health Department, and EPA Region 2 for distribution at the public meetings which were held on February 18 and 20, 1997.)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

cc: as

Michael Bonk, Health Officer, South Plainfield Health Department  
Eric Wilson, On Scene Coordinator, EPA Region II Remedial Action Branch

Appendix 6 - Health Consultation (July 1997)

# Health Consultation

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CORNELL DUBILIER ELECTRONICS INCORPORATED  
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557879

JULY 31, 1997

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia



## HEALTH CONSULTATION

CORNELL DUBILIER ELECTRONICS INCORPORATED  
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557879

Prepared by:

Exposure Investigations and Consultation Branch  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation

## Background and Statement of Issues:

The Region II, U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) determine the health implications to emergency personnel (e.g. police, fire, medical) who may come in contact with polychlorinated biphenyls (PCB) contamination at the Cornell-Dubilier Site in South Plainfield, New Jersey.

The Cornell-Dubilier Electronics, Inc. facility operated on the 25 acre site until the early 1960's. The company manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled on-site, and transformer oils contaminated with PCBs were reportedly dumped onto site soils [1]. The site is currently known as the Hamilton Industrial Park and is occupied by approximately 15 industrial businesses [1].

At the request of EPA Region II, health consultations were conducted by ATSDR in October 1996 and May 1997 addressing outdoor and indoor PCB contamination, respectively, at the site [1,2]. ATSDR concluded that the PCB contamination both in the outdoor soils and the interior surfaces pose a potential long-term health threat to workers and other individuals who would come in frequent contact with the contamination [1,2]. Although EPA has initiated some interim measures to prevent access to contaminated soils, there have been concerns expressed by emergency personnel (fire, police, medical, etc.) who may, in the course of their duties, access the site and come in contact with the PCB contaminated soils. There is also concern for those personnel who may enter the buildings and come in contact with PCB-laden dust on interior surfaces.

## Discussion:

PCBs persist in the environment for years and have the ability to collect in human fatty tissue. The PCBs represent a health threat to humans exposed chronically and have been shown to affect the skin and liver [3]. Reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [3,4].

Exposure to emergency and other personnel entering the site would likely be through inhalation and/or ingestion of PCB-contaminated dust, or absorption of PCBs through the skin. Inhalation of PCBs and its combustion products could also occur in the event of a fire. Contamination may also be carried home on shoes and clothing exposing other members of the family.

Emergency personnel responding to events at the facility would likely be there for only short periods of time on an infrequent basis. It is unlikely that such limited contact with the facility would result in exposures to PCBs that would pose a

health hazard. If a fire occurred at the facility, the heat could volatilize the PCBs. Unprotected personnel could be exposed to PCBs and their thermal degradation products by inhalation or by deposition on uncovered skin. However, fire fighters at the facility would be protected from such exposures by normal protective equipment, including respirators and protective outerwear.

If emergency personnel and others come in contact with contaminated soil or dust, there is a potential for shoes, clothing, and equipment to transport contamination off site. Contamination carried into the home can persist for long periods of time exposing family members. Children are at an increased risk due to more frequent contact to dusty floor surfaces, hand-to-mouth activities, and low relative body weights resulting in greater exposure.

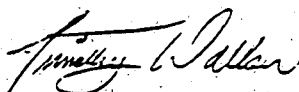
#### Conclusions:

Based on the available information:

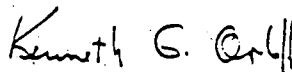
1. The site does not pose a health threat to fire fighters, police, medical personnel, or other emergency personnel due to the anticipated short duration of exposure to PCB contamination.

#### Recommendations:

1. Ensure that personnel accessing the site and coming in contact with contaminated areas perform appropriate decontamination procedures prior to exiting the site.



Timothy Walker, M.S.  
Environmental Health Scientist



Concurred:

Kenneth G. Orloff, Ph.D., DABT  
Senior Toxicologist

**References:**

1. ATSDR Health Consultation for the Cornell-Dubilier Site, October 7, 1996.
2. ATSDR Health Consultation for the Cornell-Dubilier Site, May, 1996.
3. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
4. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.

Appendix 7 - Health Consultation (September 1997)

# Health Consultation

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CORNELL DUBILIER ELECTRONICS INCORPORATED  
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557379

SEPTEMBER 9, 1997

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia

HEALTH CONSULTATION

CORNELL DUBILIER ELECTRONICS INCORPORATED  
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NID981557879

Prepared by:

Exposure Investigation and Consultation Branch  
Division of Health Assessment and Consultation  
Agency for Toxic Substances and Disease Registry

## Background and Statement of Issues

The Region II U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review analytical data of fish samples collected from surface water near the Cornell-Dubilier Electronics (CDE) site and determine if polychlorinated biphenyls (PCBs) are present in fish at levels of public health concern.

The CDE site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey [1]. The 25-acre site is located in an industrial/commercial/residential area and is bordered by commercial businesses and residences on the south, west, and north, and on the southeast, east, and northeast by an unnamed tributary to Bound Brook [1].

During the 1950s, Cornell-Dubilier Electronics, Inc. manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled onsite and transformer oils contaminated with PCBs were reportedly dumped directly onto site soils [1]. The company vacated the site in the early 1960s.

The site is currently known as the Hamilton Industrial Park and is occupied by an estimated 15 commercial businesses. Numerous companies have operated at the site as tenants over the years [1].

An unnamed creek that borders the site to the southeast, east, and northeast flows into Bound Brook. The confluence of the unnamed creek and Bound Brook is approximately 800 meters downstream of the site. Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond. Available information indicates that fish are being caught and eaten from Bound Brook and New Market Pond [2].

The EPA has conducted sampling events at the site. In mid-1996, several surface soil samples (0 - 3 inches and 0 - 6 inches) were collected from a 1.5-acre fenced area at the site and analyzed for PCBs; PCBs were detected at a maximum concentration of 51,000 parts-per-million [3].

In mid-1996, the EPA collected surface soil samples (0 - 3 inches) from 23 locations at the site [1]. Samples were analyzed for PCBs; PCBs were detected at concentrations ranging from 3.6 to 3,000 ppm [1].



A fish sampling event was conducted in surface waters adjacent to and near the CDE site. Fish were collected from the following locations:

Three areas of Bound Brook located downstream from the CDE site

Two areas of New Market Pond

The unnamed creek at a location immediately adjacent to the CDE site

The unnamed creek at a reference location 1,000 meters upgradient of the CDE site [4].

Fish filets were analyzed for PCBs. PCBs were detected at maximum concentrations indicated in Table 1 [4].

Table 1. Maximum Concentrations of PCBs Detected in Fish Filets

| <u>Location</u>    | <u>Concentration (ppm)</u> |
|--------------------|----------------------------|
| Bound Brook        | 12.2                       |
| New Market Pond    | 36.0                       |
| Adjacent, CDE      | 9.8                        |
| Reference Location | 7.8                        |

Note: Fish ranged in total length from 4.1 to 25.6 inches (average = 10.9 inches). Fish ranged in total weight from 0.8 to 35.4 ounces (average = 9.7 ounces)

## Discussion

PCBs are persistent in the environment and break down slowly. In water, PCBs partition significantly from water to aquatic organisms, such as fish [5]. The bioconcentration factors (BCF) of various PCBs in aquatic animals vary from 26,000 to 660,000; BCF is defined as the ratio of the concentration of a contaminant in aquatic organisms to the concentration of the contaminant in the surrounding water. Evidence also indicates that PCBs biomagnify within the food chain [5].

In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [5,6]. PCBs have very low potential for producing acute toxic effects [6].

Consumption of fish that contain elevated levels of PCBs can result in exposures at levels of public health concern. The Food

and Drug Administration (FDA) has set tolerances for PCBs in the edible portions of fish at 2 ppm [7]. Tolerances are established at levels that are sufficient for the protection of public health [8]. The tolerance level of 2 ppm PCBs was exceeded in at least one sample of each of the species collected [4].

### Conclusions

Based on the available data, ATSDR concludes that PCBs in fish collected in surface water near the Cornell-Dubilier Electronics Site in South Plainfield, New Jersey exceed FDA tolerance levels for PCBs in fish and are at levels of public health concern.

### Recommendations

Fish that contain greater than 2 ppm PCBs in the edible portion of the fish should not be eaten.

If further clarification is required or if additional information becomes available, please do not hesitate to contact this office at 404/639-0616.



Steven Kinsler, Ph.D.  
Senior Toxicologist

## References

1. ATSDR Record of Activity, Cornell-Dubilier Electronics, Log # 97-1004, S. Kinsler, October 30, 1996.
2. Personal Communication, S. Kinsler, ATSDR; E. Wilson, EPA; July 31, 1997.
3. ATSDR Record of Activity, Cornell-Dubilier Electronics, Log # 96-4046, S. Kinsler, September 19, 1996.
4. Bound Brook Sampling and Edible Fish Tissue Data Report, Cornell-Dubilier Electronics Site, South Plainfield, New Jersey, Prepared By: Environmental Response Team Center, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, July 1997.
5. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
6. ATSDR Case Studies in Environmental Medicine, Polychlorinated Biphenyl Toxicity, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, June 1990.
7. Code of Federal Regulations, Title 21, Volume 2, Chapter 1, Part 109, Section 109.30--Tolerances for polychlorinated biphenyls (PCBs), April 1, 1996.
8. Code of Federal Regulations, Title 21, Volume 2, Chapter 1, Part 109, Section 109.4--Establishment of tolerances, regulatory limits, and action levels. April 1, 1996.

Appendix 8 - Health Consultation (May 1998)

# Health Consultation

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CORNELL DUBILIER ELECTRONICS INCORPORATED

SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557879

MAY 26, 1998

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

HEALTH CONSULTATION

CORNELL DUBILIER ELECTRONICS INCORPORATED  
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557879

Prepared by:

Exposure Investigation and Consultation Branch  
Division of Health Assessment and Consultation  
Agency for Toxic Substances and Disease Registry

## Background and Statement of Issues

The Region II U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) evaluate analytical data from residential properties located across the street from the Cornell-Dubilier Electronic Inc. site in South Plainfield, New Jersey, and determine if polychlorinated biphenyls (PCBs) in indoor dust and surface soils are at levels of public health concern [1]. Exposure Investigation and Consultation Branch (EICB) has completed several verbal health consultations regarding on-site PCB contamination and made public health recommendations that have included sampling of residential homes near the site [2,3].

The Cornell-Dubilier Electronics Site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. The 25 acre site is bordered by commercial businesses and residences on the south, west and north, and on the southeast, east, and northeast by an unnamed tributary to Bound Brook [2]. It is estimated that 540 persons reside within 0.25 miles of the site; the nearest residence is approximately 200 feet from the site [2].

During the 1950s, Cornell-Dubilier Electronics, Inc. manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled onsite and transformer oils contaminated with PCBs were reportedly dumped directly onto site soils. The company vacated the site in the early 1960s [2].

The site is currently known as the Hamilton Industrial Park and is occupied by an estimated 15 commercial businesses. Numerous companies have operated at the site as tenants over the years [2]. A paved driveway is used to enter the park; the pavement ends within 100 yards of entering the park. It has been observed that vehicles entering the industrial park during dry conditions create airborne dust [2]. The driveway leads into what was formally a dirt, gravel, and stone roadway that nearly encircles the business structures at the site. The roadway separates the structures from a heavily vegetated vacant field, and was paved by EPA in September 1997 as part of the site stabilization process to mitigate migration of contaminated dust.

On March 24, 1998, ATSDR and EPA Region II held a conference call to discuss indoor dust and surface soil data collected from 16 residential properties and analyzed for PCBs.

The residential properties sampled by EPA were selected using information obtained from air modeling. The indoor dust and surface soil sampling was conducted to evaluate health impacts to area residents from PCB contamination.

In October 1997, EPA Region II collected surface soil samples from 16 residential properties [4]. The soils were analyzed for PCBs. Approximately 20 surface soil samples were collected from each residential property. PCB levels in surface soils ranged from none detected to 22 parts per million (ppm).

In November 1997, EPA Region II collected indoor dust samples from 12 residential properties [5]. The indoor dust samples were analyzed for PCBs. Approximately two to four indoor dust samples were collected from each residential property. PCB levels in indoor dust ranged from none detected to 205 ppm (or 117 micrograms (ug) total PCBs in sample mass).

## Discussion

Because the properties sampled were residential, it is anticipated that populations potentially exposed to contamination will include children and adults.

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [6]. PCBs have very low potential for producing acute toxic effects [6].

An immunosuppressant effect was observed in a study of monkeys chronically exposed to 0.005 mg/kg/day of PCBs. On the basis of this study of monkeys, ATSDR has derived a chronic oral Minimal Risk Level (MRL) for PCBs of  $2.0E-05$  mg/kg/day. An MRL is defined as an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure [6]. Screening level exposure-dose calculations indicate that children in some houses may exceed the MRL.

Since screening analysis identified potential for health concern, soil and dust PCB concentrations were evaluated using averaged daily doses estimated for both child and adult residential exposure scenarios and both cancer and non-cancer dose response relationships for PCBs. The exposure dose equation and parameter assumptions used for soil assessment followed that found in EPA RAGS. Exposure equations used for indoor dust assessment were based on ongoing methods development by a combined ATSDR/EPA/CDC workgroup on residential dust pathway analysis. Evaluations of health concerns were made on a house-by-house basis using estimated excess individual cancer risk, a margin of exposure analysis relative to the identified LOAEL for immunosuppression, and qualitative consideration of uncertainty based on site specific data.

## Conclusions

Based on the indoor dust and surface soil analytical data for the residential properties located across the street from the Cornell-Dubilier site, the one point and time sampling event for both indoor dust and surface soils, the unknown location of an elevated level of PCBs on a specific residential property (e.g., the one 22 ppm elevated PCB level may be located next to a child's play area or near the entryway into the home), and the uncertainty of the future indoor dust levels (how the indoor dust levels would be impacted by surface soil contamination is uncertain), ATSDR concludes the following:



1. Elevated levels of PCBs were detected in indoor dust and the surface soils at residential properties that may pose a health concern or potential health concern to the residents. The health evaluations for the residential properties are presented in the following table:

Table 1: Health Categories for Residential Properties:

| Residential Property Designations | Health Categories             | Follow up activities needed for residents with elevated levels of PCBs in indoor dust and/or surface soils   |
|-----------------------------------|-------------------------------|--|
| 1. E                              | Health concern (a)            | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>  |
| 2. D                              | Health concern (a)            | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>  |
| 3. C                              | Health concern (a)            | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>  |
| 4. G                              | *Potential health concern (b) | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p> |
| 5. O                              | Potential health concern (c)  | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p> |

|       |                              |  |
|-------|------------------------------|--|
| 6. J  | Potential health concern (b) | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p> |
| 7. B  | Potential health concern (b) | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p> |
| 8. A  | Potential health concern (b) | <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated</p> <p>surface soils at this property did not represent a health concern; however, PCBs were detected in the indoor dust</p>                             |
| 9. I  | Potential health concern (b) | <p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p> |
| 10. M | Potential health concern (d) | <p>reduce/stop potential exposure to surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>indoor dust not a health concern; however, surface soil contamination may contribute to future indoor dust contamination</p>                              |
| 11. F | Potential health concern (d) | <p>reduce/stop potential exposure to surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>indoor dust not a health concern; however, surface soil contamination may contribute to future indoor dust contamination</p>                              |
| 12. L | No health concern (e)        | no action at this time   |

|   |                              |  |
|---|------------------------------|--|
| 13. H.  | Potential health concern (c) | sample indoor dust<br><br>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils |
| 14. K.  | Potential health concern (c) | sample indoor dust<br><br>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils |
| 15. N   | Potential health concern (c) | sample indoor dust<br><br>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils |
| 16. P   | Potential health concern (c) | sample indoor dust<br><br>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils |
| <p>(a) <u>Health concern</u> - take action to reduce/stop exposures to PCBs</p> <p>* <u>Potential health concern</u>- data needed, prudent to take action at this time to reduce exposures:</p> <p>(b) resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil) contamination may be tracked into homes)</p> <p>(c) indoor dust sampling should be conducted to better assess the health concern at these residential properties</p> <p>(d) surface soils are elevated and may pose a future health concern for indoor dust contamination</p> <p>(e) <u>No health concern</u>- no action needed at this time</p> |                              |  |

2. The nature and extent of off-site migration of PCB contaminated dust via wind has not been determined.
3. The nature and extent of surface soil PCB contamination in this residential community has not been determined.

#### Recommendations

1. Prevent potential exposure to PCBs in surface soil at levels of public health concern. ATSDR believes that an interim measure or permanent solution to the contaminated residential yards and/or indoor dust should be put in place within six months.
2. As additional data becomes available on the extent and degree of off-site contamination, provide health education to residents on ways to reduce their potential exposure to polychlorinated biphenyls (PCBs) present in indoor dust and surface soils. ATSDR will assist in the health education at this site through the Division of Health Assessment and Consultation's Community Involvement Branch.

3. Different cleaning methods should be used in the homes where elevated levels of PCBs were detected in indoor dust by wet/damp dusting and mopping on floors and hard surfaces with a cleaning solution such as Lestoil or Mr. Clean. These products are mineral-oil-based cleaners that help to clean up the PCBs. Carpets should also be shampooed with these products. Prior to cleaning of the home interior surfaces by EPA, the use of a regular vacuum cleaner to remove dust is NOT recommended unless a HEPA (high efficiency particulate adsorption) filter is placed on the vacuum cleaner exhaust.
4. As needed, additional dust suppression techniques should be used at the site to prevent off-site migration of contaminated dust.
5. Conduct indoor dust sampling at residential properties where only surface soil sampling was conducted.
6. Determine if other residences in the area are contaminated (include soil samples from properties located upwind of the facility).

If further clarification is required or when additional information becomes available, please contact this office at 404/639-0616.

Tammie McRae Date: 5-17-98  
Tammie McRae, M.S.

Concurrence: [Signature] Date: 5/25/98

## References

1. VonGunten, Brian. ATSDR Record of Activity Region 2. Cornell-Dubilier Electronics Inc. Request from EPA Region II for a health consultation for the Cornell-Dubilier Electronics site. March 11, 1998.
2. Kinsler, Steven. ATSDR/Exposure Investigation and Consultation Branch Record of Activity, Cornell-Dubilier Electronics, South Plainfield, New Jersey. Log No. 97-1004. October 7, 1997.
3. Walker, Timothy. ATSDR/ Health Consultation, Cornell-Dubilier Electronics (aka Hamilton Industrial Park), South Plainfield, New Jersey. May 27, 1997.
4. Cornell-Dubilier Electronics Sampling Trip Report (Surface Soil Sampling). DCN#: START-02-F-01454. TDD#: 02-97-02-0015. PCS#: 2076. Sampling Date: October 27,28,29 and 30, 1997.
5. Final Report, Vacuum Dust Sampling, Cornell Dubilier Electronics, South Plainfield, New Jersey. U.S. EPA Work Assignment No.: 2-262. Weston Work Order No.: 06647-142-001-2262-01. U.S. EPA Contract No.: 68-C4-0022. February 1998.
6. Toxicological Profile for Polychlorinated Biphenyls (PCBs) Update. U.S. Department of Health and Human Services. Agency for Toxic Substances and Disease Registry. September 1997.
7. PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures. National Center for Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency. EPA/600/P-96/001F. September 1996.

**Appendix 9 - ATSDR Fish Consumption Advisory**

**C**ertain fish in the Bound Brook, New Market Pond, and the streams that feed into them may be unsafe to eat. These include:

- largemouth bass
- pumpkin seed
- carp
- white sucker

**These fish are unsafe and should not be eaten.**

**F**ish in these streams and ponds are contaminated with PCBs. Consumption of these fish may be harmful to your health. PCBs are classified as probable cancer causing substances in humans.

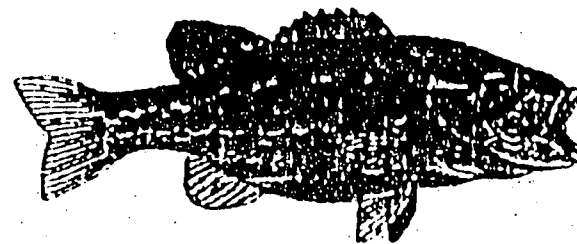
The amount of PCBs in fish from these waters is higher than the amount allowed by the U.S Food and Drug Administration. No one should eat these fish. You are at highest risk from eating fish contaminated with PCBs if you are:

- pregnant
- a nursing mother
- a woman of child-bearing age
- a child under the age of 15 years.

For information on the health effects of PCBs call:  
ATSDR Regional Representatives, Arthur Block or Brian von Gunten at (908) 906-6931

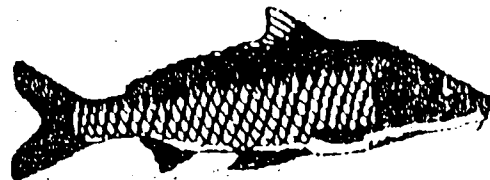


# ATSDR Fish Consumption Advisory



**Bound Brook**

**New Market Pond**



**Middlesex County**

**August 1997**

**Appendix 10 - Health Consultation (October 1999)**



**Health Consultation**

**Cornell-Dubilier Electronics Incorporated  
Cercis No. NJD981557879**

**South Plainfield, Middlesex County, New Jersey**

**Prepared By:**

**Hazardous Site Health Evaluation Program  
Consumer and Environmental Health Services  
Division of Environmental and Occupational Health  
New Jersey Department of Health and Senior Services**

**Under a Cooperative Agreement With  
The Agency For Toxic Substances and Disease Registry**

## BACKGROUND AND STATEMENT OF ISSUES

### *Statement of Issues*

The Environmental Protection Agency (EPA), Region II Removal Action Branch, has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) and the New Jersey Department of Health and Senior Services (NJDHSS) evaluate the 1997 surface soil sampling from the banks and sediment sampling results from the streambed along the Bound Brook in order to respond to the following questions:

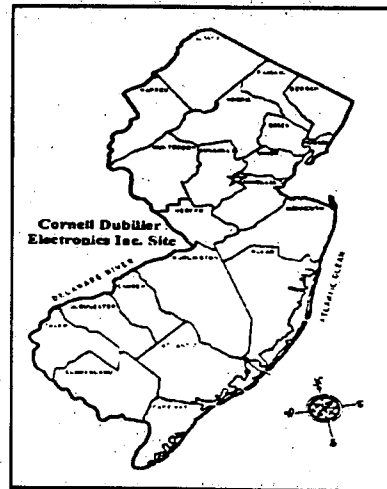
- (1) Does the data present a public health hazard?
- (2) What does ATSDR/NJDHSS recommend?

These samples were collected from locations upstream, midstream, and downstream of the Cornell-Dubilier site at transects established by USEPA. The soil and sediment samples were analyzed for total PCBs. This health consultation will focus on the 1997 Environmental Protection Agency (EPA) sampling results (conducted by *Roy F. Weston, Inc.*).<sup>(1)</sup> Only the public health significance of exposures to soils or sediments off-site, based primarily on the 1997 sampling event, will be evaluated in this health consultation. The pathway specifically examined is the ingestion of PCBs contaminated soil or sediments, by residents utilizing the Bound Brook. Health effects in both adults and children will be evaluated. The public health of potential exposures to other environmental media, if contaminated, will not be addressed within the context of this health consultation.

### *Background*

The Cornell Dubilier Electronics, Incorporated (CDE), site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey (see inset).

It consists of approximately 25 acres in an industrial/residential area. The site is bordered by residences and commercial businesses from the south to the north. The Bound Brook borders the site on the northeast. The Bound Brook and the Cedar Brook converge approximately 800 meters downstream of the site. Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond. Conrail railroad tracks crisscross the Bound Brook just north of the site.



From 1936 to 1962, CDE manufactured electronic parts and components, including capacitors. CDE tested transformer oils, and it is alleged that the company dumped materials contaminated with polychlorinated biphenyls (PCBs) and other hazardous substances directly onto the soil at the site. Currently known as Hamilton Industrial Park, the site is occupied by approximately 15 commercial businesses. In June 1994, soil, surface water, and sediments were sampled at site and analyzed by EPA. The results of the sample analyses indicated the presence of PCBs and trichloroethylene (TCE) in the site soils. PCBs were also detected in the sediment of the unnamed tributary of the Bound Brook. PCB contamination of more than one tenth of a mile of wetland frontage of the tributary was documented. A sediment sample collected from the stream near the back of the property indicated the presence of PCBs, 1,2 dichloroethene, TCE, and lead.

EPA initiated a study of the nearby waters of the Bound Brook in June of 1997. As part of this study, water, sediment, and fish samples were collected from the Bound Brook and New Market Pond. Fish collected from Bound Brook were found to contain PCBs at levels higher than the US Food and Drug Administration action level of 2.0 ppm. In response to the level of PCBs detected in the fish, on August 8, 1997, NJDHSS, NJDEP, and New Jersey Department of Agriculture (NJDOA) in coordination with the USEPA, issued an interim fish consumption advisory for the entire length of the Bound Brook, Middlesex County. In August of 1997, ATSDR issued a separate fish consumption advisory for the Bound Brook, New Market Pond, and the streams that feed into them. The advisory warned residents that the fish were contaminated and that eating them could cause health problems.

#### *Site Visit*

On July 13, 1999, Steve Miller and Narendra P. Singh of the New Jersey Department of Health and Senior Services (NJDHSS) visited the site. The NJDHSS was accompanied by a representative of the ATSDR Regional Office (Tom Mignone) and USEPA's On-Scene Coordinator Eric Wilson. The following observations were made during the site visit:

- The CDE property, now known as Hamilton Industrial Park, is an actively used industrial property that includes numerous brick buildings.
- A storm and drain sewer discharges into the Bound Brook on the northeastern border of the site. Conrail railroad tracks crisscross the Bound Brook just north of the site. The confluence of the Cedar Brook and the Bound Brook is approximately 800 meters downstream of the site. Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond.
- Not all the areas of the Bound Brook being investigated is easily accessible to area residents. Reach 4 and 5 (as designated in study) is accessible to residents.

## DISCUSSION

This section contains discussion of the health effects in persons exposed to PCBs contaminated soil or sediments associated with the CDE site. Health effects in both adults and children will be evaluated. The PCBs levels used in this health consultation are from the USEPA field sampling, (1997) of off-site contamination associated with CDE site.<sup>(1)</sup>

Health effects evaluations are accomplished by estimating the amount (or dose) of those contaminants that a person might come in contact with on a daily basis. This estimated exposure dose is then compared to established health guidelines. People who are exposed for some crucial length of time to contaminants of concern at levels above established guidelines are potentially more likely to have associated illnesses or disease.<sup>(6)</sup>

Health guidelines are developed for contaminants commonly found at hazardous waste sites. Examples of health guidelines are the ATSDR's Minimal Risk Level (MRL) and the USEPA's Reference Dose (RfD). When exposure (or dose) is below the MRL or RfD then non-cancer, adverse health effects are unlikely to occur.

MRL's are developed for each type of exposure, such as acute (less than 14 days), intermediate (15 to 364 days), and chronic (365 days and greater). ATSDR presents these MRL's in Toxicological Profiles. These chemical-specific profiles provide information on health effects, environmental transport, human exposure, and regulatory status.

The toxicological effects of the contaminants detected in the environmental media have been considered singly. The cumulative or synergistic effects of mixtures of contaminants may serve to enhance their public health significance. Additionally, individual or mixtures of contaminants may have the ability to produce greater adverse health effects in children as compared to adults. This situation depends upon the specific chemical being ingested or inhaled, its pharmacokinetics in children and adults, and its toxicity in children and adults.

NJDHSS, NJDEP, and NJDOA in coordination with the USEPA issued a interim fish advisory for the entire length of the Bound Brook, Middlesex County and posted signs warning the public not to consume fish from the entire length of the Bound Brook including the New Market Pond. In August 1997, ATSDR issued a fish consumption advisory for Bound Brook, New Market Pond, and the streams that feed into them. The advisory warned residents of contaminated fish and advised the residents that consumption of the fish could be harmful to their health. These advisories are in effect and are helpful in reducing the exposure to contaminant in the Bound Brook.

An approximate length of 2.4 miles of Bound Brook was investigated. A total of 104 transects were established within the 2.4 mile area of concern. For ease of interpretation, nine reaches were established which encompassed the above designated transects. Each transect extended from the north bank to the south bank of the Bound Brook. Within each transect, there was a total of five

sample locations. At each sample location, one surface (0-6") and one subsurface (18-24") soils/sediment sample were collected. This health consultation reviews analytical data from the surface soil/sediment samples (0-6").

PCBs were detected in many surface soil samples collected from the Bound Brook. Range of PCB concentrations in the reaches 1 to 9 are reported in the Table 1. PCBs was present at concentrations above the ATSDR comparison value (CV). Comparison values for health assessments are contaminant concentrations in specific media that are used to select contaminants for further evaluation. The Environmental Media Evaluation Guides (EMEGs) are media-specific comparison values used to select chemical contaminants of potential concern. ATSDR EMEGs are based on the MRLs presented in the ATSDR Toxicological Profiles. ATSDR's CV's for soil are used to determine which contaminants detected in soils may be at levels of potential health concern and should be further evaluated from a public health perspective. However, soil contamination levels above an ATSDR CV does not necessarily represent a health threat and CV's should not be used for setting clean-up levels.

**Table 1: Reported Range of PCBs in surface soil and sediment of the Bound Brook**

| Reach                   | Range of PCBs Conc. (ppm) | Comparison Value-EMEG (child/adult)-ppm |
|-------------------------|---------------------------|---|
| 1 (transects A-M)       | N.D. - 85                 | 1/10                                    |
| 2 (transects N-W)       | N.D. - 22                 | 1/10                                    |
| 3 (transects X-FF)      | N.D. - 830                | 1/10                                    |
| 4(transects GG-WW)      | N.D. - 14                 | 1/10                                    |
| 5 (transects XX-III)    | N.D. - 62                 | 1/10                                    |
| 6(transects JJJ-WWW)    | 0.1 - 110                 | 1/10                                    |
| 7(transects XXX-JJJJ)   | N.D. - 25                 | 1/10                                    |
| 8 (transects KKKK-VVVV) | N.D. - 22                 | 1/10                                    |
| 9 (transects A-D)       | N.D. - 0.2                | 1/10                                    |

N.D. = Non-Detect

EMEG=Environmental Media Evaluation Guide

## **Pathways Analysis and Public Health Implications**

An exposure pathway is the process by which an individual is exposed to contaminants that originate from some source of contamination. A completed exposure pathway consists of five elements:

- (1) Source of contamination;
- (2) Environmental media and transport mechanisms;
- (3) Point of exposure;
- (4) Route of exposure; and
- (5) Receptor population.

A completed exposure pathway must include each of the elements that link a contaminant source to a receptor population.<sup>(6)</sup> Based on the current site conditions, it is reasonable to assume that a completed exposure pathway exists to those individuals who visit the Bound Brook.

### ***PCBs Exposure***

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. In humans, long-term exposure to PCBs can affect the skin and liver. PCBs have very low potential for producing acute toxic effects.

Residents visiting the Bound Brook may be exposed to PCB contaminated surface soils and sediments. To evaluate the worst-case exposure scenario, exposure doses for PCBs were calculated using the maximum reported concentrations in Reach 4 (14 ppm) and Reach 5 (62 ppm). These areas are easily accessible to the residents. There is the presence of a nature trail in the area of Reach 5, persons using the nature trail may be brought in direct contact with contaminated surface soils and/or sediments.

It was assumed the accessible areas of the brook was visited by a child weighing 35 kg (elementary school age or older) and an adult weighing 70 kg. In addition, children were assumed to ingest between 100-200 milligrams (mg) of soil per visit, while the amount for adults was estimated at 50-100 mg.

### ***Child and Adult (acute exposure)***

The estimated exposure doses to the highest levels of PCBs found in Bound Brook soils/sediments (Reach 4 and 5), were below the No Observed adverse Effects Level (NOAEL) for non-carcinogenic adverse health effects (based upon animal studies) presented in the ATSDR Toxicological Profile for PCBs. At such concentrations, it is unlikely that non-carcinogenic adverse health effects would occur. Therefore, the exposures to children and adults who occasionally visit Bound Brook do not constitute a public health hazard.

### ***Child (intermediate exposure)***

To evaluate the toxicological effects of intermediate oral exposure (15-364 days) for PCBs (to adults and children) it was assumed that a person would visit the site a total of 2 days per week, 20 weeks per year. This exposure factor was applied to the calculated exposure dose to evaluate the significance of PCBs exposure. For the intermediate exposure scenario for children, at the maximum concentration of PCBs detected (62 mg/kg), the calculated exposure dose were about 1000 times below the NOAEL for non-carcinogenic adverse health effects (based upon animal studies) presented in the ATSDR Toxicological Profile for PCBs. At such concentrations, it is unlikely that non-carcinogenic adverse health effects would occur.

### ***Adult (intermediate exposure)***

In the intermediate exposure scenario for adults, at the maximum concentration of PCBs detected, the calculated exposure dose for adults were below the NOAEL for non-carcinogenic adverse health effects (based upon animal studies) presented in the ATSDR Toxicological Profile for PCBs. At such concentrations, it is unlikely that non-carcinogenic adverse health effects would occur.

### ***Adult (chronic exposure)***

Residents (adults) visiting the Bound Brook may be exposed to PCB-contaminated surface soils. However, it is highly unlikely that residents will be exposed to contaminants in the Bound Brook on a regular basis. Therefore, chronic exposure to residents are not likely to occur. If there is a change in exposure scenario (e.g., land use change), ATSDR/NJDHSS will reevaluate the need for other additional actions at this site.

## **ATSDR Child Health Initiative**

ATSDR's Child Health Initiative recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination in their environment. Children are at greater risk than adults from certain kinds of exposures to hazardous substances emitted from a waste site. They are more likely to be exposed because they play outdoors and they often bring food into contaminated areas. They are shorter than adults, which means they breathe dust, soil, and heavy vapors closer to the ground. Children are also smaller, resulting in higher doses of chemical exposure per body weight. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages. Most important, children depend completely on adults for risk identification and management decisions, housing decisions, and access to medical care. NJDHSS/ATSDR evaluated the potential for children to be exposed to PCBs contamination detected in Bound Brook. As previously mentioned, we do not expect that adverse health effects would occur for the children who occasionally visit at the site.

## **Conclusions**

### ***Evaluation of Nature and Magnitude of Health Risks***

Based on available data reviewed for the Bound Brook, the Brook currently poses a **no apparent health hazard** to children and adults who utilize the brook for recreational purposes. The ATSDR and NJDHSS have concluded that surface soils and sediment contamination does not exist at levels of public health concern for the occasional users.

Due to the presence of a nature trail in the area of Reach 5, persons using the nature trail may be brought in direct contact with contaminated surface soils and/or sediments. Health risks were estimated for the assumed completed exposure pathway associated with ingestion of contaminated surface soil. Using the highest level of contamination as a worst case scenario and conservative exposure factors, the NJDHSS has determined that residents using the site would not be exposed to PCBs at levels of public health significance. The calculated exposure dose for children and adult were well below the levels of PCBs exposure that have been shown to caused adverse health effects.

## **Recommendations**

### ***Cease/Reduce Exposure***

1. Maintain current fish advisory and postings for the Bound Brook and New Market Pond.

### ***Site Characterization***

1. New environmental, toxicological, health outcome data, or changes in conditions as a result of implementing the proposed remedial plan, may determine the need for other additional actions at this site.



## **Public Health Action Plan**

The purpose of a PHAP is to ensure that this health consultation not only identifies public health hazards, but provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. Included is a commitment on the part of ATSDR and NJDHSS to follow up on this plan to ensure that it is implemented. The public health actions to be implemented by ATSDR and NJDHSS are as follows:

### **Public Health Actions Undertaken by ATSDR and NJDHSS**

1. Environmental data have been evaluated within the context of human exposure pathways and relevant public health issues.
2. NJDHSS, NJDEP, and NJDOA in coordination with the USEPA issued a interim fish advisory for the entire length of the Bound Brook, Middlesex County and posted signs warning the public not to consume fish from the entire length of the Bound Brook including the New Market Pond. In August 1997, ATSDR issued a fish consumption advisory for Bound Brook, New Market Pond, and the streams that feed into them. The advisory warned residents of contaminated fish and advised the residents that consumption of the fish could be harmful to their health.
3. NJDHSS prepared a site-specific fact sheet for the CDE site and made it available to local health agencies and other interested parties.

### **Public Health Actions Planned by ATSDR and NJDHSS**

1. This document will be provided to the South Plainfield Health Department, Middlesex County, New Jersey.
2. NJDHSS and ATSDR will assist the South Plainfield Health Department (SPHD) by providing public health education materials and professional expertise to explain the potential implications of human exposure to PCBs. Such assistance would be primarily in the form of "fact sheets" on the potential health effects that might result from exposure to these contaminants.
3. As additional data becomes available on the extent and degree of off-site contamination, provide health education to residents on ways to reduce their potential exposure to PCBs present in surface soils. ATSDR will provide an annual followup to this PHAP, outlining the actions completed and those in progress. This report will be provided to persons who request it, and it will be placed in repositories that contain copies of this health consultation.

### **Certification**

The Health Consultation for the CDE site was prepared by the New Jersey Department of Health and Senior Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.

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Technical Project Officer, SPS, SSAB, DHAC

The Superfund Site Assessment Branch (SSAB), Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.

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Chief, SSAB, DHAC, ATSDR

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3. National Priorities List (NPL) Update, Cornell Dubilier Electronics Inc., South Plainfield, New Jersey, EPA, September 1997.
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